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Theodore R. Varick M. D.

THE
NEW YORK
MEDICAL JOURNAL.

A
WEEKLY REVIEW OF MEDICINE.

EDITED BY
FRANK P. FOSTER, M.D.

VOLUME XLVII.
JANUARY TO JUNE, 1888, INCLUSIVE.

NEW YORK:
D. APPLETON AND COMPANY,
1, 3, AND 5 BOND STREET.
1888.

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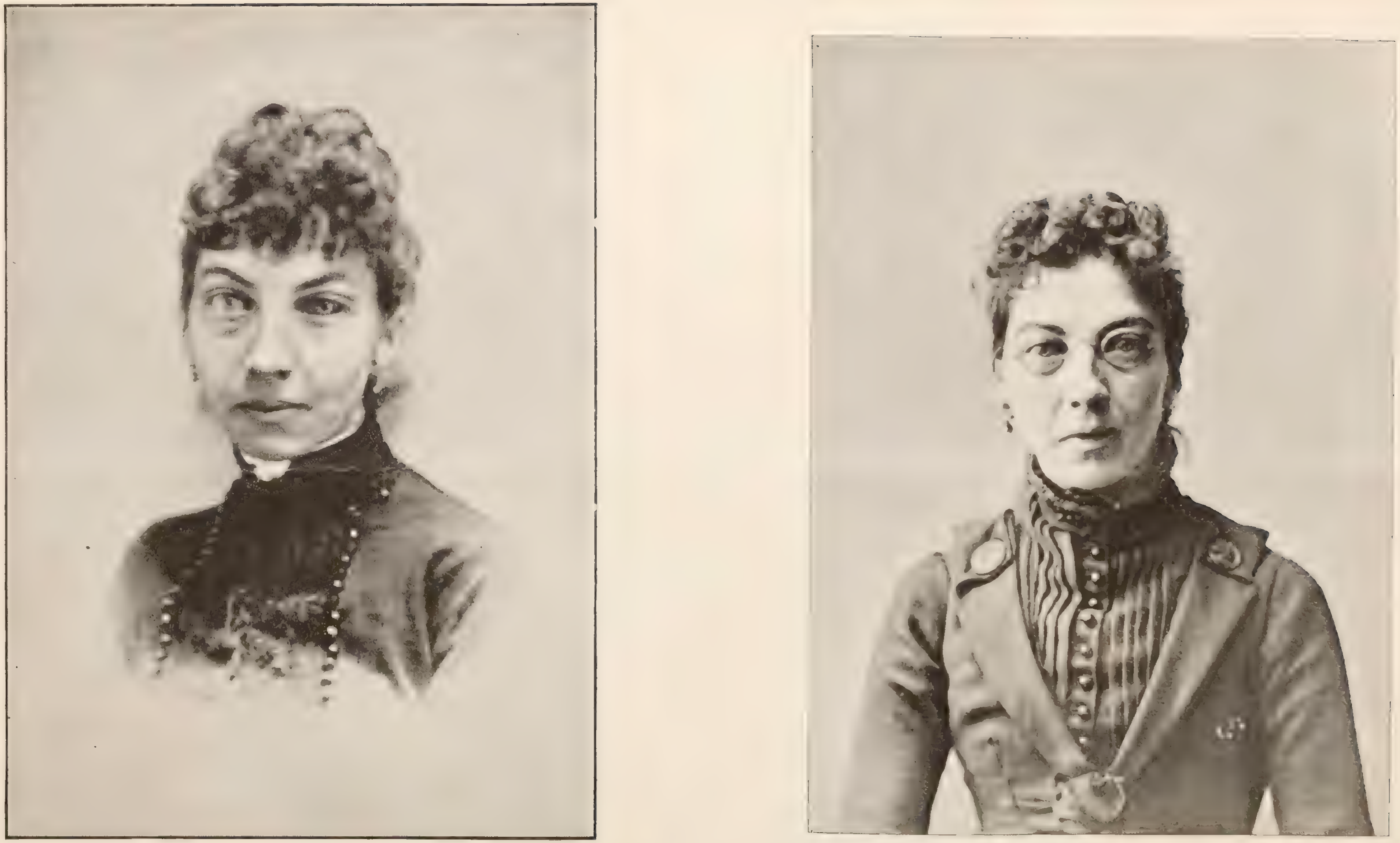
New York Medical Journal, January 7, 1888.



BEFORE TREATMENT.

AFTER EIGHT WEEKS' TREATMENT.

Dr A. L. Ranney's case of chronic chorea of thirty-one years' standing (from untouched negatives). For the history, see Case X, page 5.

THE NEW YORK MEDICAL JOURNAL, January 7, 1888.

Original Communications.

THE TREATMENT OF FUNCTIONAL NERVOUS DISEASES BY THE RELIEF OF EYE-STRAIN.*

By AMBROSE L. RANNEY, A. M., M. D.,

PROFESSOR OF THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF VERMONT.

Within the past year the attention of the medical profession has been drawn, more forcibly perhaps than ever before, to the fact that eye-strain may constitute an important element in the causation of nervous disturbances of the so-called "functional" type.

In the light shed upon this subject chiefly by recent contributions to medical literature,† the view is gradually being accepted by many in the profession that certain nervous diseases (whose pathology, to say the least, is still in doubt) are possibly not dependent in every case upon an unrecognized organic lesion; and they are being led to coincide with the statement that the term "functional" nervous disease may be properly applied, in some instances at least, to the graver nervous conditions—such, for example, as epilepsy, chorea, hysteria, or other manifestations of nervous exhaustion, and insanity. In other words, the professional mind seems more willing now than in the past to discard an apparently fruitless search for a pathognomonic lesion for each intractable nervous condition, and to look more calmly upon tangible clinical facts, even if they are radically opposed to pre-existing views.

If the view that eye-strain is a frequent cause of functional nervous derangements proves to be the correct one, beyond the possibility of doubt or cavil, it is not difficult to see that a hope of marked relief or of ultimate recovery is practically extended to many hopeless sufferers upon whom drugs have exerted little or no benefit.

In anticipation of the general acceptance of such a view (which I feel assured must in time prevail), I have consented to discuss from a clinical and physiological standpoint some of the points involved in this theory. In doing so I shall call your attention to a few illustrative cases, with running commentaries upon such of them as present, to my mind, any points of special interest. All of these cases have been encountered in my own practical office work, and most of them have been seen frequently by physicians of repute in our city, and by some physicians of note from neighboring States.

In order that those of my audience who have possibly not given much attention to the views which these cases are particularly selected to illustrate may properly understand the train of reasoning that offered a solution to my mind of the symptoms here recorded, I take the liberty of quoting a few paragraphs from a paper which I lately read before the International Medical Congress at Washington, entitled "Does a Relationship exist between Anomalies of the Visual Apparatus and the so-called 'Neuropathic' Predisposition?"* This paper was based upon a carefully tabulated analysis of the records of one hundred consecutive cases of typical neuroses taken from my private case-book.

In this paper I say:

> Until there is a uniformity in the methods employed for testing the eye-muscles,† and of terms for the recording of anomalies so detected, the profession must unfortunately continue to be more or less embarrassed in this line of research. I do not feel justified in personally discussing this subject here, as it has only an indirect relationship with this paper; but I can not refrain from saying, in this connection, that to defective methods of examination, made venerable chiefly by their antiquity, we owe to-day, in my opinion, much of our ignorance of anomalies of the ocular muscles.
>
> Some time ago I was struck, on looking over a children's magazine, with an illustration designed to teach the reader the dependence of the various organs of the body upon the brain. It represented the brain as the head of a manufacturing establishment sitting at his desk, and around him were the various departments—as, for example, the liver-department, the stomach-department, the eye-department, etc. These departments were connected with the head of the establishment (the brain) by telegraph-wires, through which each could make its wants known and receive information regarding them.
>
> Probably the designer of this sketch (made for the purpose of illustrating to the child the dependence of the organs upon the brain for their successful operation, as well as their actual support) built "better than he knew." He embodied in his drawing a graphic representation of certain fundamental principles of physiology which are not clearly understood even by many adult minds in their bearings upon the general health.
>
> The lungs do not make us breathe; except in an indirect way, by asking the brain to start the necessary muscles into action. The stomach does not perform its functions until after the brain has been requested by it to turn on the blood-supply in sufficient quantities to produce the requisite quantity of gastric juice. The intestine performs its incessant worm-like movements by no inherent power of its own. The heart keeps up its rhythmical beating only when permitted to do so by the great center of nerve force.

---

* A lecture delivered by the author before the class of the New York Post-graduate Medical School and Hospital.

† The reader is referred to the articles by Dr. George T. Stevens on "Chorea" ("Medical Record," 1876); on "Anomalies of the Ocular Muscles" ("Arch. of Ophthalmology," June, 1877); and on "Ocular Irritations and Nervous Diseases" ("New York Medical Journal," April, 1877); also to his work on "Functional Nervous Diseases" (D. Appleton & Co., N. Y., 1887); also to a contribution by Dr. H. D. Noyes, on "Tests for Muscular Asthenopia and Insufficiency of the External Recti," read by him before the International Medical Congress, Copenhagen, 1884; also to papers by the author on "The Eye as a Factor in the Causation of some Common Nervous Symptoms" ("New York Medical Journal," February 27 and March 15, 1886); on "Eye-strain in Neurology" ("New York Medical Journal," April 16, 1887); on "Eye-strain in its Relations to Functional Nervous Diseases" ("Medical Bulletin," September, 1887); and an abstract of an essay read before the International Medical Congress at Washington, entitled "Does a Relationship exist between Anomalies of the Visual Apparatus and the so-called 'Neuropathic Predisposition?'" ("Medical Register," November 19, 1887).

* An abstract of this paper was published in the "Medical Register," November 19, 1887.

† See article by Dr. G. T. Stevens in the "Archives of Ophthalmology," June, 1887.

Now, is it at all inconsistent with physiological principles to advance the view that any excess of nervous expenditure to one organ over the normal amount which should be furnished is done at the expense of the others sooner or later?

No one can draw incessantly upon his reserve capital of nerve-force without incurring a risk of ultimately exhausting it. A *bankruptcy in the reserve capital of nerve-force* entails untold ills to the individual.

The day of reckoning is postponed in any given case in direct proportion to the drafts made upon the reserve and the amount of the reserve. This may help us to explain why some escape it indefinitely, while others are precipitated into indescribable distress when life is hardly begun.

In case the bearing of eye-strain upon the problem of nervous expenditure is not very clear to some of my hearers, I deem it wise to quote here some extracts from a late brochure of mine upon this subject ("N. Y. Med. Jour.," Feb. 27 and March 13, 1886).

Speaking of hyperopia, I say:

> Fortunately for our nervous system, the normal eye takes pictures of surrounding objects *without any muscular effort* when the object is more than twenty feet away; hence, during the larger part of each day, the *normal eye is passive*, and is practically at rest, although performing its functions. How different is the condition of the far-sighted or 'hyperopic' eye, however, from the normal! For this eye (since it is *too short* in its antero-posterior axis) all objects *have to be focused by muscular effort*, irrespective of their distance from the eye. Such an eye is never passive. It has no rest while the body is awake. It is always straining more or less intensely to bring properly upon the retina the images of objects seen.
>
> The "hyperopic" condition of the eye, or "far-sightedness," as it is called, is a very common defect. It is especially frequent in persons of tubercular parentage. It is well, therefore, to suspect the existence of this defect in children or adults whose ancestors have died of "consumption."

Again, speaking of muscular anomalies, I use the following illustration:

> A high-couraged horse feels the will, as well as the support, of his driver through the reins by means of the bit. Although his course and rate of speed are changed from time to time at the will of the driver, the reins are never slackened. The horse becomes acquainted with the desires of his master by a sense of increased or diminished tension upon the reins. He is guided to either side by a difference in the tension of the two, although the driver does not entirely relax his hold upon the opposing rein while he uses the guiding one, and the difference in tension may be very slight.
>
> So it is with the normal eye. It is both controlled and supported while performing its movements within the orbit by the eye-muscles (which are its reins). The brain is the driver. At its command the eye revolves, or remains stationary at any desired point. The tension of muscles, opposed to any movement of the eye required, is so modified by the brain as to insure the requisite support to the eyeball, and to steady it as it moves. Thus, a perfect equipoise is constantly established between opposing forces, adjusted with the nicest care to meet the full requirements of the organ under all possible circumstances. The normal eye does not tremble or wabble when it moves or the attempt is made to hold it in any fixed attitude. It is a piece of machinery, perfect in all its parts, reliable in its movements, perfectly controlled by its master.
>
> The eye with "muscular insufficiency" is like a horse with an inexperienced and incompetent driver; the proper tension upon the reins is not maintained at all times, as it should be; there is no equilibrium between antagonistic muscles; fixed attitudes are maintained with difficulty for any length of time; the brain becomes more or less disturbed by its inability to properly control the eye-movements, and exhausted by the continual strain imposed upon it by the efforts required to do so even imperfectly.

A point may now be raised concerning which some misapprehension seems to exist among medical men (judging from remarks which I occasionally hear expressed). I refer to the relationship of actual squint to nervous disturbances.

No one can deny that people frequently live for long periods of time in houses impregnated with sewer-gas and in the most malarious regions without apparently suffering in consequence. Yet no intelligent man would attempt to prove to-day that sewer-gas poisoning and malarial infection were delusions simply because some people had escaped their influence.

The argument has been advanced that, because some cross-eyed people have escaped epilepsy, chorea, insanity, and functional neuroses of the milder types, it is erroneous to maintain that eye-strain has anything to do with these conditions. This is absurd upon its face. The hint might, perhaps, be pertinently dropped in this connection that cross-eyed people practically suffer but little from their muscular error, simply because they have *habitual double vision, which no effort on their part can correct.* These subjects learn very quickly to practically discard one image (the one seen by the crossed-eye) and to use one eye only for ordinary vision. In other words, they never try to blend the images of the two eyes, except in certain attitudes of the head which result in a single visual image, without an effort on the part of the patient.

It is only in those cases where (in spite of a muscular error) the images of the two eyes can be blended by a great effort that the patient begins to experience the deleterious physical influences of abnormal muscular tension in the orbit.

If we admit the proposition that eye defects, or anomalies of the ocular muscles, are liable to become causes of impaired nervous energy (because they demand an excess of nervous expenditure), we are forced to the conclusion that the earlier this source of physical depression is removed the better are the prospects of the person so relieved of escaping diseases which impaired nervous energy necessarily tends to hasten or develop. We are naturally led to question if the so-called "neuropathic predisposition" is not dependent (in a certain proportion of cases, to say the least) upon "eye-strain." We might possibly also be led to think that the so-called "tubercular tendency" (which is present, as far as my observation goes, in nearly 50 per cent. of all cases of marked functional nervous disease) might, in some cases, be modified, controlled, or perhaps arrested before its physical results become apparent by taking from the life of such subjects a load which their small reserve capital of nervous energy particularly unfits them to endure.

It is hard to give up the view, so universally conceded, that a predisposition to disease means a "constitutional taint." Yet, in many cases, we are absolutely unable to demonstrate that any evidence of physical weakness or disease has appeared until sufficient time had elapsed from the date of birth for the development of a serious impairment of nervous energy. What has caused it? Has it been deficient nourishment, a lack of maternal care or solicitude during childhood, gross violations of the rules of hygiene, or a lack of prudence on the part of the individual when of matured experience? The history of case after case answers "no" to such surmises. These, then, are not the all-important factors in every case. Phthisis, epilepsy, chorea, headaches, neuralgias, hysteria, dyspepsia, obstinate constipation, nervous prostration, inebriety, and many other evidences of the neurasthenic state are markedly hereditary. What is the load (if any) which many sufferers of this type are carrying through life? *Have they a congenital burden*—which is, perhaps, too often unrecognized? I leave these questions for future research to solve.

In this lecture I will call your attention to a few cases selected from my own case-book where the relief of ocular defects produced remarkable and unexpected benefit after all hope of recovery had practically been abandoned by the patient.

I bring these cases prominently before you in the interest of science only; because the improvement made by these patients is attributable not to drugs, but solely to Nature, when a burden of which she could not rid herself was taken away and recuperation became possible.

Did you ever see a tired horse fall prostrate under an excessive burden? *How long would he remain so were the burden not removed?*

CASE I. *Chronic Epilepsy.*—Male, aged forty-three, merchant. Began to have severe epileptic fits when seventeen years of age. Had masturbated when a boy and had been addicted in later years to excessive venery.

Family History.—One brother is a confirmed dipsomaniac; the father died of paralysis; one sister is a victim to sick headaches; no phthisis has existed in the family, so far as could be ascertained.

The epileptic seizures of this patient varied in frequency from two or three a week to one in three months. He came under my care in 1871 (when twenty-eight years old), and was treated by me for many years with enormous doses of the bromides of potassium and sodium. These salts reduced the attacks to about four a year. Stopping the bromides invariably increased the frequency of the attacks.

*Eye-defects.**—In January, 1886, his eyes were examined after his return from an extended residence in the South. He showed under atropine a *latent hyperopia* of 2·50 D., and also a manifest *esophoria* of 4°. Subsequently several degrees of "latent" esophoria also manifested itself.

Partial tenotomies were performed upon both interni, and hyperopic glasses were given him. Since the first operation (January, 1886) he has taken no bromides and has not had a convulsion. He has twice been "at death's door" with fevers, but he has shown at no time any epileptic tendencies.

CASE II. *Excruciating Headaches, Chronic Diarrhœa, and Neuralgic Paroxysms.*—Female, aged twelve.

Family History.—The father is somewhat eccentric and intemperate; pulmonary consumption was extremely common among the paternal ancestry; one brother is an epileptic and is partly idiotic; all the paternal side of the family are very excitable and nervous people.

This little patient was a great sufferer. Whenever attempts were made by her parents to send her to school, she would "break down" at once with peculiar attacks characterized by obstinate vomiting, chronic diarrhœa, intractable headache, and neuralgic pains in the spine, limbs, and chest. All medical treatment had proved of no permanent benefit. So long as study was not attempted, the child suffered only at intervals with these severe attacks, but she remained weak and delicate.

Eye-defects.—An examination of her eyes showed a *latent hyperopia* of nearly 3 D. and *esophoria* of 8°. Prior to the use of atropine she had normal vision ($\frac{20}{20}$). The wearing of spherical glasses (2 D.) and prisms (4° over each eye with the bases out) caused all her distressing symptoms to disappear within two weeks.

A letter, lately received from her mother by me, says: "I thank you next to the dear Lord for removing this burden of anxiety about my child, which was becoming unbearable."

Prisms were ordered in this case because the parents decided to postpone a radical correction of the muscular error. This step I expect to undertake very soon.

CASE III. *Chronic Epilepsy.*—Female, aged twenty, unmarried.

Family History.—The father died of apoplexy. No hereditary tendency to nervous disease or phthisis could be discovered.

The epileptic seizures had existed for five years and developed after an excessive use of the eyes in sewing upon a black material. Menstruation was regular. The epileptic fits were, however, more frequent during the week prior to and following the menstrual epoch. Under large doses of bromides and ergot she had once in her history passed six weeks without an attack; but she averaged, when I first saw her, about six attacks each month. An epileptic attack could usually be induced by *fixing the eyes for a few minutes intently upon some near object.* She had at one time as high as thirty severe fits in twenty-four hours. When the bromides were withdrawn from this patient, the fits increased to several each day (often as high as ten severe seizures). She had for years suffered from obstinate constipation and pain during her menses.

Eye-defects.—This patient was found to be *absolutely emmetropic* both before and after the use of atropine. She showed, however, an esophoria of 5° and a very low power of abduction. Subsequently, a large amount of latent esophoria developed.

Several partial tenotomies were performed upon the interni of this patient during an interval of some four months until all latent esophoria was apparently overcome. After the first operation, the lacrymal secretion, which was singularly defective, became normal, her mental despondency disappeared, and her attacks rapidly diminished in frequency. Since June 10, 1886, she has had no fits to my knowledge, nor to that of her physician so far as I can ascertain. The case was lost sight of by both of us some months ago, much to my regret. When I last tested her eyes, she showed no defect and was apparently in perfect health. She had passed several menstrual epochs without any epileptic seizures.

In this case I would call attention (1) to the fact that emmetropia existed; (2) to the fact that the eye was the apparent exciting cause of her attacks; (3) to the fact that epileptic seizures could be induced by excessive use of the internal muscles of the eye; and (4) that the esophoria was "latent" to a very marked degree.

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* For the meaning of terms employed in connection with muscular anomalies of the orbit, the reader is referred to the "New York Medical Journal" for December 4, 1886.

In addition to these points of interest, another fact is worthy of passing remark—viz., that the relief of the "eye-strain" was followed in this case by a total disappearance of the habitual constipation that previously had existed, and that menstruation ceased to be accompanied by pain up to my last notes on the case. This experience, although apparently a coincidence, is not by any means infrequent with female patients in my experience, after a partial tenotomy of an eye-muscle for the relief of an abnormal tension within the orbit. It is probably to be attributed to the fact that the nerve-power of the patient improves rapidly after the excessive expenditure of nerve-force demanded by abnormal eye-tension is arrested, thus allowing of an improvement in the functions of the other viscera. My introductory remarks will, I trust, make this explanation clear to the audience and bring this statement more into apparent harmony with physiological laws.

Case IV. *Melancholia, Morbid Impulses, Cerebral Confusion and Distress, and an Intractable Prostatic Neuralgia.*—Male, aged twenty-three, unmarried.

Family History.—The mother of the patient suffers from neuralgia and headache. The paternal grandfather had paralysis. The paternal grandmother was "extremely delicate." One brother suffers from headaches. Another brother is very excitable and of a highly nervous temperament. No case of consumption has ever occurred in any branch of the family.

Eye-defects.—Hyperopia (latent) of 2·50 D. Esophoria (manifest) 4°. Subsequently, 12° were elicited prior to any operative procedure.

This patient had been under medical care for many months for a prostatic neuralgia, and had derived no benefit from local or general treatment. He developed *melancholia*, and would frequently retrace his steps for several blocks, during a stroll, in order to touch some object which he felt he should have touched when he passed it. The use of his eyes intensified his mental symptoms markedly. He also suffered from morbid fears. He had never had venereal disease. After partial tenotomies were performed upon his interni, and his hypermetropia was corrected by + 1·50 spherical glasses, his recovery was very rapid and complete. He has had no abnormal mental symptoms or neuralgia of his prostate since the first operation (now nearly two years). His father, one brother, and a sister have since been examined by me, and all had very marked eye-defect.

In some respects this is one of the most remarkable cases I have yet observed. The mental condition of the patient, prior to the relief of eye-tension, was such as to justify the worst forebodings. Neither he nor his family had ever suspected any eye-defect in spite of the fact that his "latent" hyperopia was of a very high degree (nearly 3 D.), and his "latent" esophoria was of an equally high degree. His prostatic neuralgia was of a severe and intractable type, and its cause could not be discovered; yet it disappeared at once after a free operation upon the interni.

Case V. *Cerebral Neurasthenia, Pseudo-ataxia, and Chronic Headache.*—Male, married, aged forty-three.

Family History.—Two brothers died of phthisis, one uncle of paralysis; maternal ancestors are nervously predisposed; two children of the patient suffer from nervous disturbances.

Eye-defects.—Hyperopia (latent) of 2 D. Esophoria of 7° (manifest).

This gentleman was a great sufferer. Had been forced to give up his business from constant distress in the head, which was aggravated by any mental labor. He walked with difficulty on account of a feeling of great insecurity, and closely simulated the gait of an ataxic. He ate poorly and slept badly. No organic disease could be found, and electrical treatment was thoroughly tried, and proved of little benefit. Within twenty-four hours after a tenotomy of his internal rectus was performed he ceased to have pain in his head, walked with greater ease than for many months, and left for his distant home within a week, provided with + 1 D. spherical glasses. The last report from him noted a slight tendency toward a return of his bad feelings, and he was advised to have his eyes again examined to ascertain if any latent esophoria remained to be corrected.

In his last letter he says: "I have not had a sick-headache since leaving New York, and much less of the neuralgic pain in the neck and other parts."

Cases VI and VII. *Asthenopia and Sick-headaches.*—Males, unmarried, aged twenty-one and twenty-two. Both were college students.

Family History.—Headaches were common in their immediate relatives and ancestors, and in one phthisis was found to have affected the ancestry.

Eye-defects.—Both had slight latent hyperopia and esophoria (manifest) of a moderate degree.

These were typical cases of asthenopia and sick-headache. Both wore prisms for a while with benefit, but they found that a latent esophoria showed itself, and required a change of the strength of the prisms. The stronger prisms caused them some distress in walking. They both underwent an operation for the radical correction of the defect, and have remained entirely free from asthenopic symptoms and headache up to the present time. The necessity of wearing glasses, which was thus dispensed with, is a matter of delight to both.

In one of these cases a marked tendency to dyspepsia and chronic constipation has apparently been entirely overcome. This fact was also noted in Case III.

The last tests made of the eyes of these patients showed an entire absence of muscular defect in the orbits.

Case VIII. *Cerebral Neurasthenia, Constant Pain in the Head of Five Years' Duration, Asthenopia, etc.*—Female, unmarried, aged twenty-one years.

Family History.—Maternal aunt and five paternal relatives died of phthisis; two cousins had chronic chorea.

Eye-defects.—Patient had hyperopia (latent) of 1·25 D. and exophoria (manifest) of 2°. A latent hyperphoria of 2° was subsequently discovered.

This young lady was brought into my office by two assistants, who were obliged to carry her from the carriage. For several years she had been carried daily from her room to the library of her father's house, and, after reclining in a chair for a few hours, she would be again carried to her bedroom. She could manage with difficulty to walk slowly across a room. She had not been able to write, read, sew, or see her most intimate friends for five years on account of a constant pain in her head, which was rendered intolerable by any use of the eyes or excitement. Her symptoms began while at boarding-school, from which she was removed to her home in a recumbent posture and by easy stages.

I used static electricity upon this patient for some weeks with a slight improvement in her power of walking, but no relief to her head. I then persuaded her to consent to a relief (by partial tenotomies) of her abnormal eye-tension. Tenotomies were then performed upon her left superior rectus and both externi within the space of two weeks. From that date her improvement was very rapid. She was sent home a few weeks later practically cured.

A letter from her physician, lately received by me, says:

"Your patient is the wonder of this region. She rivals the 'Jersey Lily' in her feats of walking."

Before this patient was sent home she ascended and descended five flights of stairs daily, and averaged over a mile's walk each day without a companion to assist her.

CASE IX. *Spinal Neurasthenia; Gastralgic Attacks; Attacks of Laryngeal Spasm; Persistent Tremor.*—Female, married, aged forty-two.

Family History.—Several blood-relatives died of phthisis; father and brother died of phthisis.

Eye-defects.—The patient was found to be emmetropic (when under atropine). Esophoria (manifest) of 3° existed.

This is quite as striking a case as the one last narrated, although of a different character. The patient had been for sixteen years a chronic invalid. She was unable to bear the least excitement. Even the companionship of her family for an evening was at times too great a strain upon her nervous system. She was at times a great sufferer from severe paroxysms of neuralgia of the stomach, and frequent attacks of alarming shortness of breath and a sense of impending suffocation would occur. I personally witnessed one of these attacks in my office, and it was entirely free from a trace even of hysteria. It was of much shorter duration than an asthmatic attack, and seemed to be due to a spasm of the larynx. She became markedly cyanotic, and suffered alarming shortness of breath.

In addition to these symptoms, this patient suffered from an uncontrollable trembling of the facial muscles and limbs when at all startled or excited. She had been for years unable to attend places of amusement or to bear physical exertion.

Much to my surprise (as she had a marked phthisical history), an examination of her eyes showed no refractive error (even when under the influence of atropine). She showed, however, a very high degree of esophoria, and a partial tenotomy was performed upon both of her interni. The effect was magical. She recovered her health completely within two months, and is to-day able to endure as much as when a young girl. The last report from her, some weeks ago, states that she had "shopped all day and attended the theatre in the evening." An old friend of the family lately alluded to the case, in my presence, as one "not of cure, but of resurrection."

CASE X. *Chronic Chorea of Thirty-one Years' Duration, affecting the Head, Face, and all the Extremities.*—Female, aged thirty-three, unmarried.

Family History.—The father had pulmonary hæmorrhages for many years. One paternal aunt died of "hasty consumption." Sick-headaches are very common among both paternal and maternal ancestors. Neuralgia is a frequent complaint among the paternal ancestors.

When two years of age this girl developed chorea. The spasmodic twitchings steadily grew worse, in spite of the fact that her father was a physician, and that she had the services of the most skillful medical men from time to time. The twitchings began on the right side; but they subsequently involved the left side, and also the head and face.

She has suffered some from sick-headaches, as has also her sister. The *hands have gradually become so contractured* that all attempts to use them are more or less distressing. Her fingers could not be extended farther than would suffice to grasp small objects.

When I first saw this patient she was unable to write except by grasping the pencil with all the fingers and the palm of the left hand, and holding the left hand with the right hand as the spasmodic movements of writing were made. She walked with a peculiar unsteady and crab-like gait, ate with difficulty, and suffered great pain between the shoulder-blades and over the first lumbar vertebra (two points, by the way, which are very frequently attacked, in my experience, when eye-strain is present). She had never written with ink. Prior to menstruation (which occurred at seventeen years of age) the patient had experienced attacks (probably epileptic) which she describes as "those of numbness, followed by a loss of consciousness." She has had chronic constipation all her life. The memory and mental faculties are perfect.

When I first saw this patient the spasms were very violent, especially about the face and neck. The limbs were jerked about, the fingers too tightly clinched at times to grasp anything, and the speech was rendered peculiarly spasmodic and almost unintelligible at times. She sputtered, and at times ejected drops of saliva, when endeavoring to converse.

At the first examination she exhibited no refractive error; but, under atropine, a high degree of hyperopia (1·75 D.) was detected, and proper spherical glasses (+ 1 D.) were at once provided. In order to test her eye-muscles, the services of Professor J. Williston Wright, of this city, who saw her with me by invitation, were invoked to hold her head. This he did with no small effort by clasping the head on either side, and firmly pressing her head against his body as he stood behind her chair. During this examination she whistled shrill notes on two occasions, and underwent the most violent facial and body contortions.

The results of this imperfect examination (necessarily so under such conditions) indicated to me that a high degree of hyperphoria existed; and, as I could not again see the patient for some months, I decided to perform a free division of the left inferior rectus muscle. I then instructed the patient to try and get a photograph taken, if possible, before she saw me again. She laughingly said that she "had never been able to have a picture taken, but that she would do so if she could." She then departed for her home with instructions to return to me for treatment in the autumn. The first picture of this case is one that she was able to have taken three weeks after the operation, when her head and shoulders had become comparatively calm, as a result of the relief afforded by it. This photograph was deemed at that time a great success by herself and friends. You can see in it the blurred outlines which indicate that the movements were still somewhat active.

During the past autumn this patient has been under my care for some eight weeks. I have partially divided the right superior rectus and both externi in order to overcome a high degree of left hyperphoria and exophoria, and I have administered static sparks daily to the spine and limbs. The second picture will give, better than words can describe it, an idea of the wonderful improvement which has taken place. Prior to her departure for her home (some weeks since) she could thread the finest cambric-needle, and pass her fare to the conductor of a street-car without attracting the notice of passengers, or throwing it out of the window, as she certainly would have been apt to do two months previously. She can fully extend her fingers, walk several miles a day, write with far greater certainty and ease, and eat at a boarding-house table without exciting comment. Her limbs still twitch somewhat immediately before going to sleep, and, in the presence of strangers or when unduly excited, she still shows some spasmodic movements of the face and shoulders. When calm she is, however, perfectly composed, and almost entirely free from convulsive movements. She considers herself as practically cured; but I suspect that time and some further operative work upon the eye-muscles will be demanded before complete restoration to health is effected.

As I regard this case as one of the most distressing and typical cases of chronic chorea ever reported, it may be well to state that the patient is well known to Professor A. M. Phelps and Professor J. W. Wright, of this city, and Professor Woodward, of Burlington, Vt., and that she has been seen by many members of the profession both from this city and distant States during her treatment in my office.

During the whole treatment of this patient no drugs have been employed, and the photographs are from untouched negatives. I attribute to the static applications the rapid relief of the contractured state of the fingers and the improvement in her general strength; but, from many facts observed during my treatment of her, I am convinced that the relief of the eye-strain is alone deserving of whatever credit may be claimed for her recovery. Four weeks before she was dismissed from my care she read and sewed continuously for several days, and was immediately precipitated into a relapse, which as rapidly subsided when the cause was ascertained and its recurrence prevented.

(*To be concluded.*)

TREATMENT OF FEVER.*

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FEVER, strictly defined, is any abnormal elevation of the temperature of the body, and the discussion of its treatment if limited to the strict application of the term would imply merely the discussion of the means at our command for the restoration of the disturbed heat equilibrium to the normal standard. But in the practice of the healing art it is but seldom that we meet with instances in which abnormal elevation of temperature is the only pathological condition which demands the exercise of our skill. As a matter of fact, the pyrexia is almost always associated with other symptoms which demand as close attention as does the fever itself. Indeed, the concurrent circumstances are frequently of such a character that the simple elevation of temperature falls into a secondary place, and our attention must be directed to the combating of morbid processes which are far more serious and threatening to the life of the patient.

In order to be able to cope with these dangerous maladies the physician should enter upon his work fully equipped with a knowledge of their nature and causes, and of the means which we have at our command for partially or completely nullifying their injurious influences upon the human body. He should have sufficient knowledge of the pathological and clinical history of disease, not only to fully appreciate the significance of the symptoms by which he is confronted at a given time, but also to anticipate the difficulties and dangers by which they are likely to be followed. Practically, therefore, the treatment of fever involves the management of many different forms of disease, and of every variety and combination of morbid physiological phenomena. In order to render the subject as clear as possible, I shall begin with the discussion of the simplest forms of fever, and then take up the more complicated.

The purest type of fever that is known to clinical observers is that to which attention was first called by Genzmer and Volkmann in 1877,* and which was denominated by them febris simplex, or aseptic fever. Volkmann found that, after subcutaneous operations and injuries such as fractures, dislocations, etc., a rise in the temperature of the body occurred, lasting from twenty-four hours to a week or even longer. This elevation of temperature, which frequently attained a height of from 103° to 104° F., was ushered in by no premonitory symptoms; no disturbance of the nervous centers was observed beyond an occasional slight headache or feeling of malaise; patients usually made no complaint whatever, but seemed to retain their ordinary feeling of well-being, and the existence of fever was only determined by the objective examination of the surgeon. There were, however, certain symptoms present which may be considered as always accompanying a pyrexial temperature when their development is not interfered with by other morbid states. These are increased frequency of pulse and respiration, increased excretion of carbonic acid and the nitrogenous ingredients of the urine, particularly urea, and a slight diminution of the normal secretions of the body. The tongue was usually slightly if at all coated, the digestion not noticeably impaired, and the appetite not diminished. There was, however, an increase of thirst, and the skin was moist though not sweating. A similar febrile process is said to follow occasionally upon cutting operations performed with antiseptic precautions. The disease is one which requires no treatment. The points of interest are: that in spite of the considerable elevation of temperature which obtains in many cases, there are no symptoms referable to the nervous centers with the exception of those directly involved in the production of the febrile temperature. There are no marked disturbances of the functions of the alimentary canal, and there are none of the pulmonary or other complications that are observed in the more serious febrile diseases.

The form of fever most nearly resembling this with which medical practitioners have to deal, is the so-called ephemera, or simple continued fever. By this term I mean to indicate a febrile condition of rapid onset and brief duration, unaccompanied, as a general rule, by serious complications, and depending for its production on various causes. It is most commonly the result of disordered states of the alimentary canal, resulting from the introduction of indigestible or irritating substances, from fatigue, and from exposure to cold or heat. In children it is often a consequence of very slight disturbances, and in such cases is of very short duration. It is also observed in tropical regions, and during the heated term in the temperate zone as a direct effect of the action of intense heat upon the nervous system. This latter form of the disease is known as ardent continued fever. It is manifested by a rapid rise in temperature, sometimes to the height of 104° or 105° F., accompanied by increased rapidity of the pulse and respiration, increased excretion of urea, with a diminution in quantity and rise in the specific gravity of the urine, a dry, hot skin, and diminution of the secretion of the digestive fluids. The tongue is usually more or less coated, the patient complains of thirst, and there is usually some headache and feeling of weariness and restlessness. More intense nervous symptoms, such as delirium, coma, and convulsions, are only found in children, in those who have a predisposition to these symptoms, and in cases which result from the action of excessive heat. This simple form of continued fever has no exact pathological identity such as distinguishes those which result from a specific infection, but is to be regarded simply as a pyrexia due to a variety of causes. It results from this that for the practical physician to make a simple diagnosis of ephemeral fever is not sufficient. The pyrexia of itself involves little if any danger to life, and the most important duty of the diagnostician is to determine its cause, as it is upon this that the rational treatment of the disease must be based. If the disorder is observed in an infant or child, and alarming symptoms, such as great restlessness and jactitation, delirium, coma, or convulsions, present themselves, while some means must be adopted for their speedy relief, it should not be forgotten that they are probably dependent for their origin upon the presence of undigested food or other irritating substance in the stomach or intestine, and that the cure of the case will only be affected by the spontaneous or artificial removal of these matters. If convulsions be actually present, steps should be taken to subdue them before anything else is done, as they involve a direct and immediate danger to life. The means for this are so well known that it is unnecessary for me to discuss them. After the convulsions have been quieted and the alimentary canal emptied as far as possible by the action of emetics, enemata, and the subsequent exhibition of a cathartic, other remedies may be employed for the control of the febrile symptoms. The pyrexia itself, however, will rarely need specific medication, and such agents as will contribute to the amelioration of the concomitant phenomena, such as the arterial excitement and the restlessness or delirium, are all that are necessary. In adults, in whom the fever is almost always caused by digestive disturbances, the therapeusis should be based upon the exciting cause. A brisk cathartic, followed by some measures calculated to soothe the irritated condition of the alimentary canal, will usually be all that is necessary, though here too, if the arterial excitement be high and the patient complain of headache or sleeplessness, the bromides, aconite, and veratrum viride may be given according to the discretion of the practitioner. Antipyrine and antifebrine have been found to have a sedative and analgesic effect in addition to their power to reduce temperature, and a moderate dose, late in the evening, will frequently induce sleep and probably hasten recovery. But the elevation of temperature in itself requires little or no treatment. The fever which results from overheating of the body is usually intense, and is complicated by the danger of inflammation of the brain or its meninges. Such cases require a more active treatment addressed to the nervous system itself. Another morbid condition, which stands midway between the aseptic fever of Volkmann and the infectious diseases, is the ordinary surgical or wound fever. This is observed during the interval which intervenes between the reception of the wound and the establishment of suppuration. It probably results from the absorption of morbid products from the swollen and infiltrated tissues. It usually supervenes in from twenty-four to forty-eight hours after the occurrence of the operation or injury. The temperature mounts rapidly, but seldom reaches a dangerous height. The other symptoms are those which accompany simple fever; but the more serious manifestations of disturbance of the central nervous system may present themselves, though usually to only a moderate extent. They are generally limited to a delirium more or less pronounced, in accordance with the gravity of the case and the susceptibility of the patient, and to a greater restlessness and greater liability to complications than is observed in simple fever.

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* Read before the Medical Society of the County of Kings, December 20, 1887.

* "Sammlung klinischer Vorträge," No. 121, 1877.

The essential fevers differ from those already considered in that they present themselves to us as more distinct pathological entities. In these diseases we have to deal not only with a disorder of the ordinary functions of the body, but also with a specific agent which underlies the visible phenomena, and stands to them in the relation of an efficient cause. The treatment of these diseases, therefore, should be both general and specific. Unfortunately, however, in the majority of them, the infecting germ or substance has not been discovered, or, if it is known, no means have as yet been found by which it can be neutralized or destroyed without at the same time destroying the body upon which it preys. There are, however, at least two of this class which may be treated specifically—viz., rheumatism and malarial fever. Rheumatism, which is due to the accumulation of an organic acid, probably lactic acid, in the body, yields to the action of the alkalies, and this treatment, first proposed by Fuller, is to-day, when properly carried out, thought by many to be the best that we have. In salicylic acid Buss has given us another specific remedy, but whether it is as valuable as the alkalies is still undetermined. The use of the alkalies or salicylates in rheumatism, and of quinine in malarial fevers, is followed by such a marked amelioration of all the symptoms that it is usually not necessary to resort to any other medication, unless it be for the purpose of improving the condition of the digestive apparatus, or, in some instances, to relieve unusually severe nervous symptoms or combat complications. It is noteworthy that in these affections the fever of itself, though running high, seldom requires any special antipyretic treatment. If the cause is removed or neutralized, the pyrexia and all of its accompanying symptoms promptly subside. It is true that quinine, which acts so efficiently upon the malarial infectious germ, is also an antipyretic; but it is also true that the doses necessary for its cure are not large enough to reduce the temperature to the same extent in any other febrile malady. It is also true that the salicylates are active and efficient antipyretics, but it is not probable that it is through their antipyretic influence that they combat the rheumatic condition, because the alkalies, which have no marked effect upon the temperature of the body, are equally good in the treatment of this disease. It is also interesting to observe that quinine will not reduce the temperature of rheumatism as it does that of the malarial fevers, and that the converse holds with regard to the salicylates.

In the management of the other specific fevers, diphtheria measles, scarlet fever, and typhus abdominalis, we have to rely entirely upon our general therapeutic resources, though we may entertain the hope that in the future some specific remedies may also be discovered for the relief of these diseases.

The treatment resolves itself into the proper hygienic management of the patient and the adoption of measures to mitigate his sufferings and avert or control the dangerous symptoms and complications.

In regard to the hygienic management I will content myself with a few observations on the subject of diet. First, water: The thirst by which fever patients are tormented represents undoubtedly an actual need of the body for more fluid, though it is no doubt intensified and rendered abnormally great by the dryness of the mouth, stomach, and intestines. It should be our aim, therefore, to administer sufficient to supply the actual needs of the organism without entirely yielding to the voracious demands of the sufferer, as an excessive imbibition of water is apt to disturb the stomach and produce emesis and to take away the appetite for more strictly nourishing substances. The nurse should be instructed to give water in small quantities in the intervals between the administration of other foods, and this whether the patient requests it or not. The latter rule is imperative in instances presenting the typhoid condition, because the obtundity of the senses is so great that such persons frequently fail to recognize their own wants. Care should be taken that the water given is pure, and for this reason it is better not to use the ordinary ice-water, as the presence of bacteria and other spores in the ice delivered at our houses is quite constant, as has been shown by Dr. Prudden; and the abnormal condition of the stomach might favor their development and the accompanying fermentations and decompositions. If ice-water is needed it is better to fill bottles from the hydrant and put them on the ice. When vomiting is present, and it is thought well to give cracked ice, it would undoubtedly be best, where practicable, to have pure water frozen for the purpose on the premises. The addition of acids to the water would to a great extent overcome this difficulty. It has been suggested by Dr. Austin Flint, in his able paper on the "Pathology and Treatment of Fever," read before the Ninth International Medical Congress, that in febrile conditions there is an actual diminution of the production of water by combustion in the body. This, if true, would furnish an additional and very important reason for its free administration. It is not, however, as far as I know, demonstrated that there is such a failure. It would seem, from the result of physiological experiments performed by himself and Dr. John C. Draper, that, during health, and particularly during short periods of fasting, water is one of the results of the oxidative processes. But whether diminished excretion of water in fever is to be taken as a sign of its diminished production, or simply indicates that it is retained in the body, is not proved. My impression is that Dr. Flint underestimates the amount of water given off by the bodies of febrile patients. It is true that the quantity of urine and perceptible perspiration, as well as the glandular secretions, are diminished, but this is to some extent compensated by the increased insensible transpiration from the skin, as demonstrated by Leyden, and by the greater frequency of breathing. Moreover, this diminution of the watery excretions is largely limited to the early days of the fever. In typhoid, for instance, in the second week the urine generally increases in quantity and diminishes in specific gravity, while sweating is much more pronounced than during the pyogenetic stage.

The other articles of diet should be given in fluid form, and it is the opinion of all writers upon the subject—and I believe of the profession generally—that they should be largely nitrogenous in their composition. Cases occur, however, in which bland, starchy substances, such as rice, arrow-root, barley-water, etc., agree very well. Dr. Flint thinks that it may be advisable to administer these hydrocarbonaceous substances more freely than has hitherto been the custom. He bases his argument for their use on their well-known efficacy in maintaining the temperature of the body during exposure to excessive cold. He thinks that the demand for the production of heat causes such a destruction of the hydrocarbons of the body—viz., the adipose tissue—that their free administration might, to some extent, do away with this loss. The objections to their use have been based upon the inability of the febrile stomach and intestines to properly digest them, owing to the diminished secretion of the salivary, pancreatic, and intestinal juices. If this can be overcome, Dr. Flint's suggestion may prove to be a very valuable one. In health, the generation of heat occurs principally in the muscles, and this probably holds true also in fever, where an abnormally intense process of some kind is going on in the muscular substance. This pathological process is shown by the extensive degeneration which is found post mortem, though these changes differ somewhat in different diseases, and those found in fever are not the same as have been found by Litten and others in animals whose temperature has been simply raised by preventing a discharge of heat from the body. In the latter have been found extensive fatty degeneration, while in the former this change, if it occurs, is preceded by a granular albuminoid degeneration, or by an amyloid transformation. In order, however, to supply material for the carrying on of these processes in the muscles, the adipose tissue of the body is drawn upon very largely, and it is quite possible that the introduction of hydrocarbonaceous articles with the food might save the fatty tissues from such a rapid disintegration. At any rate, the experiment is well worthy of trial. The administration of nitrogenous substances is, however, of primary importance, as they will undoubtedly assist in recuperating the rapidly disorganizing muscles. Here, too, the question of assimilation comes up. When the toxæmia is intense, and its malign influence is exerted upon the glandular and digestive apparatus, even the simplest foods can not be digested and assimilated. It then becomes necessary to avail ourselves of the assistance which science has recently rendered us in this emergency, and procure an artificial digestion of the aliments before they are introduced into the body. Armed with the means which we now have to overcome this difficulty, we are in far better condition than ever before to combat the inanition which always threatens those who are affected by long-continued or intense fever. I have no doubt that, by a systematic use of peptonized foods, the mortality from these diseases, and particularly from enteric fever, may be very considerably diminished. As an illustration of their value, I may mention the case of a physician affected with typhoid fever which ran for six weeks, with an evening temperature, for two or three weeks, of about 104° F., with only moderate morning remissions. The tongue remained moist and almost entirely clean throughout the entire course of the disease. This gentleman, for four or five weeks, took no other nourishment than peptonized milk. Though this is an exceptionally favorable instance, still I believe that such a result may frequently be approximated if the patient can be induced to adhere to the diet.

The question of the administration of alcohol in fever is also an important one, and may be appropriately discussed at this point, because of its occupying a position midway between food and medicine. When fevers assume the sthenic type, or when they run a mild and uncomplicated course, the administration of alcohol is not only unnecessary, but frequently inadmissible. It is also, I believe, a mistake to administer stimulants from the beginning of an attack in the hope of averting unfavorable consequences. When, however, the adynamic condition is well marked at any time in the course of the disease, and especially if the symptoms are those indicative of a typhoid condition, a free and regular administration of alcohol is at once called for. Thus, in typhus fever, which is the type of the adynamic series, its administration should in many cases be begun as soon as the diagnosis is made. In measles, scarlet fever, and the early stages of enteric fever, alcohol is usually not indicated unless the adynamia is more than ordinarily pronounced. But in diphtheria, and in the latter half of most cases of typhoid, it is regarded by most practitioners as the best means we have for overcoming the depression of the vital powers. Dr. N. S. Davis, of Chicago, however, claims that, even in these instances, alcohol is unnecessary, and that equally good or better results may be obtained without its use. The particular indications for the administration of alcoholic stimulants in fever are cardiac weakness as evinced by indistinctness of the first sound and a feeble pulse, and jactitation or subsultus, which show that the integrity of the nervous system is impaired by the persistence of high fever or the intensity of the specific poison. Under such circumstances, the rule is to administer sufficient alcohol to overcome the symptoms.

In order to obtain the best results from its use, it should be prescribed in the same way as any other medicine, in definite doses given at stated intervals, very little reliance being placed upon the judgment of the attendants. It is not easy to say whether, under these circumstances, alcohol is or is not of value as a food. There are, however, some physiological and clinical facts which would seem to indicate that it is. Professor Flint, arguing from the standpoint of the physiologists, claims that it, like other hydrocarbons, is oxidized in the body with the production of force. It is also a matter of common observation that in typhoid conditions generally large quantities of alcohol may be taken into the body without their giving rise to any characteristic odor in the breath, and it is one of the old rules of practice that, as soon as this odor is discovered, the dose should be diminished. It has been suggested by some that alcohol may have an antipyretic effect, but this is, to say the least, questionable.

In the further treatment of fever regard should be had to the nature of the infection, the pyrexia, and the condition of the special systems. In the typical septic fevers—such as pyæmia, septicæmia, and some of the puerperal diseases—the very free administration of alcohol has, according to the testimony of all observers, more or less of a specific curative influence.

Whether it actually affects the life of the infecting organisms, or whether it assists the tissues in resisting their attack, I do not know, but its good effects are so remarkable that its use in these affections has become universal. In erysipelas the sesquichloride of iron has also, apparently, a specific controlling influence.

When the disease is associated with active inflammations, particularly of the serous membranes—as in cerebro-spinal fever and peritonitis—opium is the recognized remedy. Aside from these instances, we have no drugs which exert anything like a special action upon the morbid process itself, unless such an action may be attributed to the mineral acids, or the combination of carbolic acid and iodine in typhoid.

The antipyretic treatment may be carried out either by the action of cold upon the surface of the body, or by the exhibition of some of the drugs which are known to have this peculiar effect when given internally. The direct abstraction of heat—a method of which I have little personal experience—seems to be best accomplished by the use of the graduated bath of von Ziemssen. The patient is immersed in the bath at a temperature of about 90° to 95° F.; this is gradually cooled, by the addition of cold water or lumps of ice, to 70 or 68 degrees.*

The patient remains in the bath about fifteen minutes, or until he begins to feel chilly, at the end of which time he is replaced in bed and dried. If there is any coldness of the extremities, they are warmed by the application of heat, and if there is any feeling of exhaustion, some hot broth or mild stimulant is given. The internal temperature continues to fall for about half an hour after the patient is removed from the bath. At the end of that time the temperature should be taken, preferably in the rectum, and if there is a fall of from two to three degrees C. it is considered sufficient. When the fever heat again rises to the point which is considered dangerous, the bath is repeated; 103·5° to 104° F. is considered to be the proper indication for the commencement of the treatment. In the use of the cold bath, which is the form recommended by Liebermeister, the patient is at once immersed in water at a temperature of 70°. The length of time for the bath is ten minutes; the effects obtained are the same as those of the graduated bath. The cold bath, however, is not deemed so advisable as the graduated where there is great adynamia, and neither one should be used if there is intestinal hæmorrhage, perforation, or a tendency to collapse.

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* H. von Ziemssen, "Klinische Vorträge"; "Antipyrese und antipyretische Heilmethoden," Leipsic, 1887.

The cold pack is another method, but is stated by Liebermeister to have only about one fourth the efficacy of the cold bath. The simpler method of sponging the body with cold water, while very grateful to the patient, has little or no antipyretic effect unless continued for a long time.

Though highly recommended by many European authors, it is doubtful if the antipyretic treatment is as useful as it has been represented to be. American practitioners have never found it necessary to resort to it as frequently as has been done in Europe, but their results are probably as good. It seems probable to me that the injurious effects of temperatures under 105° F. have been considerably overestimated, and Dr. Da Costa, who recommends the cold bath, states that it is not necessary to employ it unless the temperature reaches that height.*

That good effects do follow the use of the antipyretic treatment is unquestionable, but whether these effects are due to reduction of temperature or to the improved condition of innervation which results from their use is the question. The same effect upon the nervous system can be attained by cool sponging of the body, which reduces the temperature very slightly, and I have been informed by Dr. Daniel Ayres that he has seen similar results follow the oiling of the surface of the body in fever patients. I am not aware that oiling the surface brings about any reduction of temperature.†

It is also not improbable that the benefits to be derived from cold bathing, even aside from the reduction of temperature, have been overstated by Liebermeister and others. Eichhorst, who recommends the practice in typhoid fever, makes the moderate statement that an improved condition of the nervous system not infrequently follows the use of the cold baths, and Struempell also is very guarded in his recommendation of them. It has further been ascertained by Senator, by a comparison of the statistics of the different hospitals of Berlin, that in the Augusta hospital, where the antipyretic treatment has not been used, the percentage of recoveries from typhoid fever is greater than in those institutions in which this method has been employed.‡ It is probable that, with the more extensive use of the recently discovered antipyretic drugs, antipyrine and antifebrine, the cold baths will gradually fall into disuse.#

An additional advantage which these drugs have over the direct abstraction of heat by means of cold water is that they cause an actual diminution of the production of heat in the body, whereas the cold bath exerts no such influence. It is stated by Niemeyer, as the result of experiments by Liebermeister, that the production of heat is actually increased by the use of the cold bath.* But even if there were no actual increase, but the production simply remained the same, while the temperature was lowered by the more rapid abstraction of heat, antipyrine and antifebrine would still be more useful. The other antipyretics—namely, quinine, aconite, and digitalis—are not so useful on account of their depressing qualities, and they will probably be entirely replaced in the future by antipyrine and antifebrine.

These drugs may be employed either by the stomach, rectum, or subcutaneous injection, without annoyance to the patient, or the necessity of so many trained assistants, and with just as favorable if not more favorable results. If deemed advisable, it is possible, by their use in moderate and regularly repeated doses, to retain the temperature at almost any point deemed advisable. Whether, however, this is necessary in ordinary cases is doubtful. Many cases of typhoid and other infectious fevers run their course with moderately high temperatures, but with no very alarming symptoms, and many of the worst cases, particularly of the septicæmic conditions, and also of typhoid, show no hyperpyrexia from beginning to end. Indeed, it would seem that a certain increase in the temperature of the body is a part of the normal course of a febrile disease, and that, unless it reaches a hyperpyrexial degree, it may be safely let alone. If, however, the temperature rises above 105°, it becomes dangerous, and in that case it must, if possible, be controlled by antipyretic remedies. The point which I wish to make in regard to the antipyretic treatment is that it should not be too hastily adopted, that the physician should not allow his attention to be too exclusively occupied by this one symptom to the neglect of others which are in many, if not in the majority of cases, more important, and that the great majority of cases of fever will run their course favorably without any antipyretic treatment whatever. The attention of the physician should be especially occupied in watching the development of collateral symptoms, which should be combated, where they require it, according to the well-recognized rules of therapeutics. He should always bear in mind that there is more danger of over-treating than of under-treating the patient.

Where we are unable to apply specific remedies, our object should be, first of all, to attend to the general nutrition of the body; second, to maintaining the strength of the patient by stimulants where food is inadequate to this end; third, combating unfavorable symptoms in the nervous and vascular systems; and, lastly, to the artificial reduction of the temperature, if this should attain a dangerous height.

The treatment of the symptoms connected with the nervous system will vary according as their type is sthenic or asthenic. The headache, restlessness, and more or less active delirium observed in the course of the more sthenic fevers, and at certain stages of those of the asthenic variety, are best controlled by agents which act as sedatives upon the nerve-centers without diminishing the secretions. These are the bromides, chloral, urethane, and paraldehyde. In mild cases the bromides, particularly at night, are sufficient. Where the restlessness is more pronounced, and insomnia is a marked symptom, chloral in moderate doses is beneficial. In the administration of this drug the best results are obtained by giving two or three moderate doses—say ten grains to an adult at intervals of two hours, beginning early in the evening. By this plan we avoid any danger of too great a depressing effect upon the heart, and secure a gradual and somewhat cumulative soporific effect. When it is not thought safe to use chloral, and we desire a purely hypnotic effect, paraldehyde, in doses of from one to two drachms, or urethane, thirty to forty grains, may be given with safety, and with almost absolute certainty of obtaining a beneficial result. In the low delirium and vigilance of the asthenic fevers the best sedative is opium, and the best form of administration is that of a pill. The ordinary dose is from half a grain to a grain every three or four hours. This may usually be omitted for a few hours in the early part of the day, when the tendency to delirium is least marked, and resumed in the afternoon. It may be advantageously combined with quinine, camphor, or the monobromide of camphor. When the mucous membranes and skin are very dry and harsh, I believe it to be advisable to combine small doses of calomel with the opium. This is a plan of treatment recommended by Dr. George B. Wood,* and, though I would not carry it as far as he did—that is, to the point of slight salivation—still I believe that its moderate use is often followed by very salutary effects. This treatment should not, however, replace the free and regular exhibition of alcohol. In instances where the delirium is maniacal, and it is important to quiet the patient quickly, subcutaneous injection of morphine should be resorted to, but only as a temporary expedient. In addition to these measures, it may be well, when the delirium is active, to apply cold to the head.

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* Introduction to J. C. Wilson's "Treatise on the Continued Fevers," New York, 1881, p. xvi.

† Von Ziemssen states that the *warm* bath has the same effect on the nervous system, the difference between this and the cold bath being that the former does not reduce the temperature. (*Op. cit.*, p. 26.)

‡ "Dtsch. med. Wchnschr.," 1885, p. 733.

# Liebermeister himself stated, before the discovery of antipyrine, antifebrine, etc., that, were it necessary for him to choose between the cold bath and quinine in the treatment of typhoid, he would in most cases take quinine. (Von Zeimssen's "Cyclopædia of the Pract. of Med.," Am. transl., New York, 1874, vol. i, p. 216.)

* See also Liebermeister, "Antipyretische Heilmethoden," Von Ziemssen's "Handb. d. allg. Therapie," Leipsic, 1880, Bd. i.

Circulatory disturbances are also to be treated according to their active or adynamic character. When the pulse is rapid, strong, and resistant, the heart's action forcible, and its sounds clear and distinct, it may be well, even if this occur in the early stages of fevers of the typhoid type, to use some arterial sedative. Frequently the agents used for the control of the nervous condition will also affect this. If any other drug is employed, it should be one as little depressing as possible. Probably the best of the arterial sedatives for use in such cases is veratrum viride. While this drug exerts a potent effect in lowering vascular pressure, it is known to be almost free from danger. Its effects are not of long duration, and it appears to produce no lasting debility. For these reasons it is much better adapted to the treatment of the early stages of typhoid fever than aconite, the use of which can not but be fraught with more or less danger, inasmuch as we can not know at what time the disease will assume the asthenic type. In doses of three or four minims of the fluid extract at intervals of two to three hours, veratrum viride is, I believe, a perfectly safe arterial sedative. When the heart begins to flag, and the pulse becomes soft and non-resistant, the alcohol and opium, which are usually demanded for the relief of other symptoms, will be sufficient for this. If, however, some re-enforcement of the treatment be necessary, the best agent that we have at our command is the oil of turpentine. This can be given in three-to-five minim doses, either in a capsule with the opium, or by itself in an emulsion. Its disagreeable taste may be overcome by the addition to the mixture of a few drops of the oil of gaultheria. In typhoid fever turpentine is also useful for its direct effect upon the intestinal mucous membrane. Attention was first drawn to this fact by Dr. George B. Wood (*l. c.*), and its value has been attested by many experienced practitioners since his day. The dryness and heat of the skin of fever patients are most pleasantly relieved by sponging the surface with cool water, to which alcohol, bay rum, or Florida water may be added. When, on the contrary, there is profuse sweating, acetic acid or vinegar may be added to the water, and, if this be not sufficient, a grain of the oxide of zinc, with a twelfth or eighth of a grain of the extract of belladonna, may be given in a pill every three hours. When pulmonary complications present themselves in the form of asthenic bronchitis or pneumonia they call for an increase in the amount of stimulants, and usually for the exhibition of some stimulating expectorant. It is not necessary for the purpose to introduce any other agent than those already mentioned, as there is nothing more useful in these cases than alcohol, quinine, and the oil of turpentine. Carbonate of ammonia may be of use, but, I think, is not as desirable as the drugs already alluded to.

When in the course of the infectious fevers there is a marked diminution in the quantity of urine, with the appearance of albumin or of the morphological elements which indicate the existence of nephritis, the treatment will depend upon the character of the collateral symptoms. Should there be no marked evidences of uræmic poisoning, it may be best not to adopt any special medication. If, however, the signs of uræmia are well marked, we should give a mild hydragogue cathartic, and, if this is not sufficient, should endeavor to induce copious perspiration. This can be best done by the hypodermic injection of from one eighth to one sixth of a grain of the nitrate or muriate of pilocarpine. This may be preceded by the use of the cold pack, and should be accompanied by an increase in the amount of alcoholic stimulants.

I can not close this paper more appropriately than by quoting the following sage remarks of that able clinical teacher, Professor J. M. Da Costa: "Yet, to treat a case with the best chance of success, still something else is required—the practical skill which takes note of the epidemic influence prevailing; which recognizes that all cases are not alike because they bear the same name; which does not overlook that, in the same disease, apparently the brunt may fall primarily on this organ or on that organ, that the nervous system or the circulation may suffer disproportionately and exceptionally from the onset, or, as in fevers of the worst form, be overwhelmed together; which lays stress on peculiarity of causation, of temperament, of constitution; which sees, therefore, not only the disease in the sick man, but the sick man in the disease."

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* "Practice of Med.," Philadelphia, 1858, vol. i, p. 357.

ON THE USE OF
THE WET-CUP IN PLACE OF THE LEECH
IN CERTAIN ACUTE DISEASES OF THE EAR.

By GORHAM BACON, M. D.

Otologists in this country, as well as in Europe, are generally agreed as to the great value of leeching in cases of acute inflammation of the auditory canal, middle ear, or mastoid process, attended with intense pain when there are great hyperæmia and infiltration of the parts, and engorgement of the vessels in the periosteum and mucous membrane. In such cases the pain is almost always alleviated and frequently removed by the local abstraction of blood, and in many instances, I believe, the further progress of the disease is arrested.

According to Roosa, "an attack of diffuse inflammation of the external auditory canal in an adult may often be cut short by the use of leeches," and, in speaking of acute catarrh of the middle ear, he says: "The application of from one to six leeches, according to the severity of the disease and the age of the patient, will usually be sufficient to quiet the most severe pain in the ear, and to check the intensest form of catarrhal inflammation. I have seen almost magical effects from their use."

Schwartze says: "In cases of actual middle-ear catarrh where the pain is severe, if leeches are applied in the hyperæmic stage close to the tragus, they will relieve not only the pain and tension in the ear, but will gradually cut short the inflammatory process." Leeches are also of benefit in the first stage of inflammation of the mastoid cells.

Hartmann also says: "Bloodletting is often employed with very favorable results in acute inflammation of the different parts of the organ of hearing, or in acute exacerbations of chronic inflammation, accompanied by great hyperæmia and violent pain."

Wilde and v. Troeltsch have shown that the blood-supply of the tympanum is influenced by the local abstraction of blood when the point for the operation is selected close to the tragus, in front of the pinna. This is due to the fact that the veins from the membrana tympani run along the anterior superior wall of the external meatus in its lining membrane, and empty into the anterior facial vein, just in front of the tragus. Politzer says that "bleeding in this locality will also effect a depletion of the venous network situated in the cavity of the maxillary joint and its neighborhood, the importance of which Zukerkandl was the first to point out, the supply of blood in the vessels of the tympanic cavity, which are in communication with these vessels, being thus lessened." There is also an anastomosis between the vessels of the mastoid cells and the vessels of the integument covering the mastoid process, so that local bleeding at this latter point will produce a temporary depletion, not only of the vessels from the mastoid, but also of those from the tympanum anastomosing with them.

During the past eighteen months I have been using a wet-cup to produce local bleeding, instead of the leech, with most satisfactory results. For this purpose I have had made a scarificator (Fig. 1) in which six lance-shaped needles are concealed. The instrument is very similar to one shown by Dr. David Webster at the last meeting of the Medical Society of the State of New York, which he uses, together with cocaine and galvanism, for producing anæsthesia about the eye, except that I have substituted different needles. The depth of the punctures can be regulated by screwing or unscrewing the end or cap of the scarificator. When this is determined, the spring is pulled back, the instrument is applied to the parts, and the tissues are scarified. A cupping-glass (Fig. 2), similar to those manufactured by the Davidson Rubber Company, except that the glass is made smaller and adaptable to the parts about the ear, is then immersed in hot water for a few moments, in order to promote the bleeding as much as possible, and applied close to the tragus, or below the lobule, or over the mastoid process. The glass itself holds three drachms. If necessary, three cups can be applied at once in front of the tragus, just below the lobule and over the mastoid.

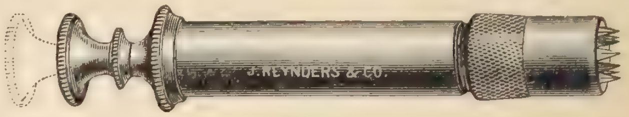

Fig. 1.

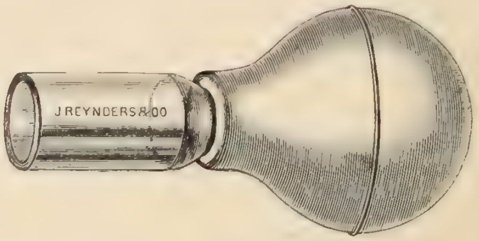

Fig. 2.

Heurteloup's artificial leech is recommended by Politzer "in cases in which a rapid depletion is required and the quantity of blood to be withdrawn is to be exactly controlled." The objection to its use is that the cutting instrument causes considerable pain and the cupping-glass is so large that its application behind the ear is attended with much difficulty on account of the irregular surface of the mastoid process. On the other hand, the punctures made with the instrument which I use cause but little pain, and the cupping-glass is applied without difficulty and held in position by the patient, thus in every way being much simpler than the use of leeches.

Bartholow, speaking of bloodletting by means of leeches and cupping, says: "The counter-irritant effects are much more pronounced from cups than from leeches," and according to Biddle "cups are generally preferable in internal inflammations, from their more decided revulsive influence."

I have been led to substitute the wet-cup for the leech for several reasons:

1. Many patients, and especially children, have a great repugnance to having a leech applied to the ear, so that it is extremely difficult in such cases to use them.

2. The bleeding from a leech-bite is frequently difficult to arrest, and in one case which came under my observation it was necessary to resort to the actual cautery to control the hæmorrhage.

3. A leech-bite occasionally gives rise to erysipelatous inflammation and ulceration, and not infrequently produces a circumscribed abscess, even in apparently healthy individuals.

4. Leeches are not always to be had, especially in the country, and are very frequently a troublesome remedy, besides being expensive.

In a paper on "Sea-bathing as a Cause of Ear Disease," published in the "Medical News," January 29, 1887, I advised the use of the cupping-glass in place of the leech where it is desirable to promote the abstraction of blood, because "the cupping-glass is always at hand, the quantity of blood abstracted can be entirely regulated, and it is much more agreeable to the patient."

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LETTER FROM VIENNA.

The Sixth International Congress of Hygiene and Demography.—Continued Discussion on Cholera.—International Regulations concerning Epidemics.—The Adulteration of Food.—The Pasteur Treatment of Rabies.

Vienna, *December 3, 1887.*

In the continued discussion on cholera, in the Third Section, under the presidency of Professor Croslawine, of St. Petersburg, Professor Max Gruber, of Vienna, read a report on the cholera in Austria in 1885 and 1886, embracing observations that he had made with reference to the spread, the contagiousness, and the prophylaxis of the disease, and concluding with the following statements: "The *Vibrio* of Koch is the specific agent in the diffusion of cholera, and this micro-organism is spread by human intercourse—by individuals and their clothing. No proof has been furnished of the communicability of cholera by means of drinking-water. Its prevalence is quite distinctly dependent on season and weather. Complete protection may be obtained by measures already adopted; but only with the aid of a perfected State sanitary organization, and particularly of an increased popular knowledge of hygiene."

Dr. Linhart, of Gotschee in Carniola, reported his observations in the cholera epidemic in that province of Austria, and pleaded in favor of local regulations to prevent outbreaks of the disease.

In the Third Section, under the presidency of Ritter von Hofmann, of Vienna, the subject of international regulations concerning epidemic diseases was taken up. The reporters were Dr. Sonderegger, of St. Gallen, Switzerland, Dr. Vallin, of Paris, and Mr. E. Murphy, of London, and the following propositions were presented:

1. A sanitary officer to be appointed for every port, whose duty it should be to obtain information as to the sanitary condition of the port and of the health of the passengers and crews of vessels arriving at or leaving the port; this information to be placed at the disposal of the consuls of the countries to which outgoing vessels were bound.

2. Every country to have a central office, to which should be sent reports of the number of cases of specified epidemic diseases occurring in every large town and port during each week (immediate notice being sent of cases of cholera); this information to be at the disposal of the governments of other countries.

3. Precautions to be taken by the sanitary authorities and officers of vessels, as already indicated, to prevent the embarkation of persons or articles infected with cholera.

4. A station to be established on the Suez Canal for the purpose of obtaining information as to the health of passengers and crews of vessels bound for Europe, but not for their detention for more than the time necessary for procuring this information. This information to be placed at the disposal of representatives of the different governments.

5. Every vessel arriving in a European port to be dealt with in a manner to be determined by the government of the country to which the port belonged.

Before the proper discussion began, a lively debate sprung up, at the instance of the president, on the question of whether the assembly would content itself with a theoretical discussion of the subject, or vote on the propositions presented. The latter was decided upon, and the reporters were accordingly instructed to prepare their propositions with that purpose in view. The discussion, which occupied several sessions, turned chiefly on the value of preventive measures against cholera. Geheimrath Professor von Pettenkofer said, among other things, that, so long as the ætiology of cholera was insufficiently known, and so long as opinions differed as they did at present as to the nature of the cholera *spirillum* and the conditions under which it throve, propositions aimed against cholera would have but little weight with governments. All preventive measures attended with restrictions on intercourse and commerce were illusory, so far as the purpose intended was concerned; all quarantines were destitute of value. If the meeting was contented with doing something, *ut aliquid fecisse videatur*, he could comprehend the propositions. He was in no wise opposed to the establishment of a central bureau of information, but the proposed prophylactic measures, such as isolation and disinfection, would hinder the spread of cholera as little as their omission would favor it. This had become evident in Bavaria in 1836, when nothing was done against the spread of the cholera, and yet no previous epidemic had been so mild. The speaker, after having repeatedly emphasized his opinion that anticontagionistic preventive measures were of no value, pointed to England, where, in spite of enormous and unlimited intercourse, no cholera had appeared for many years, and at last expressed the wish that quarantines should be abandoned for ever. Dr. Stekoulis, of Constantinople, and Professor Corradi, of Bologna, also spoke against the utility of quarantines, and against the closure of the Suez Canal.

After Hueppe, Gruber, Mosso, von Pettenkofer, Brouardel, Smith, and others had repeatedly stated their opinions, the following resolution, framed by Dr. Vallin, Dr. Sonderegger, Mr. Murphy, and Dr. Finkelnburg (of Bonn), was read:

"The Third Section of the Sixth International Congress of Hygiene and Demography expresses the desire that an international convention should be formed between the different States for protection against cholera, yellow fever, the plague, etc., the following propositions to serve as the basis: 1. Notification of each case of the above-mentioned diseases must be compulsory, and it must be made as soon as possible. 2. In a neutral State of Europe a board of information must be created, to which notice should be immediately telegraphed of the first cases of the diseases, as well as regular accounts of the course of epidemics; the board to transmit the reports to all the participating States. 3. The convention to make the necessary regulations with regard to seaports and centers of commerce, the supply of drinking-water, the purification of the soil, etc. 4. The contracting States to take care that in places where there are endemic or epidemic diseases persons and articles of merchandise suspected of being infected are not transported. 5. Ships arriving from infected places should be furnished with arrangements for isolating the sick and carrying out the necessary disinfection. 6. A ship that has started from or touched at an infected place should be submitted to a medical examination at the port of arrival. 7. When cholera cases have occurred on board a ship, the patients must be disembarked and isolated, and those who are suspected of infection must be kept under observation until an accurate diagnosis has been made. 8. Such a ship should be watched until all the requirements of disinfection have been fulfilled and it is certain that there is no longer any contagium on board. 9. At the different landings on the Suez Canal international medical supervision should be established, and officers to be designated by the sanitary council of Alexandria should be charged with taking such measures as are necessary for the safety of Europe." After some discussion, the resolution was adopted by a large majority.

In the Second Section, under the presidency of Professor Hoffmann, of Leipsic, international measures against the adulteration of food were discussed. The reporters were Professor Paul Brouardel and Professor Gabriel Pouchet, of Paris, Dr. Angele Caro, of Madrid, Dr. Ferrière, of Geneva, Professor A. Hilger, of Erlangen, and Dr. Hamel Roos, of Amsterdam. Professor Pouchet read the report in the name of Professor Brouardel. It proposed the formation of an international committee, consisting of three members from each country, to devise and execute measures against the adulteration of food. This committee was first to formulate a concise definition of what was meant by adulteration. Dr. Hilger wished that the committee's field of action might be a larger one, comprising (1) the creation of examining boards after a uniform method; (2) the fixing of uniform methods for the examination of articles of food; and (3) the procuring of international legislation on the subject. Dr. Caro proposed examining boards not only for large towns, but also for small communities. Dr. Roos, the editor of the "Revue internationale des falsifications des denrées alimentaires," favored the establishment of laboratories on the frontiers, at which certificates should be made out concerning all imported articles. The discussion was directed largely to the question of the fitness of the apothecaries to make the necessary examinations. The capability of the Austrian apothecaries for the work was maintained by Dr. Fried, of Vienna, and denied by Dr. Paschkis, of Vienna.

At an extraordinary session of the Third Section, Professor Albert, of Vienna, in the chair, Dr. Chamberland, the director of M. Pasteur's laboratory, read a long paper by M. Pasteur on the preventive inoculation of rabies. The discussion revealed a very general and gratifying recognition of M. Pasteur's achievements. Dr. Ullmann, who had carried on the inoculations at Professor Albert's clinic, stated that the method showed a mortality of 2·5 per cent., which he contrasted with the much higher percentage in non-inoculated persons. Dr. Metschnikow, the director of the bacteriological laboratory at Odessa, fully corroborated Dr. Chamberland's and Dr. Ullmann's statements.

It was voted to hold the next congress in London in 1891.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. Appleton & Co.

Edited by
Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 7, 1888.

THE COLOR REACTION OF CULTIVATIONS OF THE CHOLERA SPIRILLUM.

The discovery of the color-reaction to mineral acids shown by the cultivations of the cholera spirillum forms a valuable contribution to our knowledge of this organism, and may prove a useful adjuvant in the diagnosis of Asiatic cholera.

About a year ago Poehl stated that in cultivations of the cholera spirillum a red color was produced by the action of the mineral acids. Afterward observations were made on this subject by Bujwid, Brieger, and Dunham. More recently careful investigations as to the nature and conditions under which this reaction occurs have been made by Josef Jadassohn, and reported in Nos. 16 and 17 of the "Breslauer ärztliche Zeitschrift." The reaction consists in the production of a red or dark violet color in cultivations of the cholera spirillum in certain nutrient solutions by the addition of different mineral acids.

Hydrochloric, sulphuric, and nitric acids have all been used with success, and, aside from these, less decided reactions can be obtained with hydrobromic, phosphoric, lactic, and oxalic acids. Bujwid and Jadassohn strongly advise the use of hydrochloric acid, while Dunham obtained better results with concentrated sulphuric acid. Jadassohn greatly prefers the hydrochloric acid, and even ascribes the only reliable diagnostic power to it, on the ground that both sulphuric and nitric acid produce such changes in color in the ordinary cultivation media as to greatly interfere with or entirely conceal the characteristic reaction, while hydrochloric acid, on the other hand, produces no such change. Nitric acid is the least reliable and least valuable of the three, and yet it sometimes gives the sharpest and clearest reaction, and is the only available reagent for use in making the test in impure cultivations.

Sulphuric acid acts most rapidly and energetically, but care must be used in its application or the action of the strong acid on the nutrient medium will conceal the red color. For this reason it is better to employ this diluted one half with water, while hydrochloric and nitric acids are more useful in a concentrated form.

The reaction can be obtained in cultivations of the cholera spirillum in gelatin, agar-agar, solutions of peptone, blood serum, hydrocele fluid, etc. But it does not appear in cultivations in milk, hydrant-water, or solutions of sugar or starch. The age of the cultivations at which the reaction first appears and its intensity depend largely upon the abundance of the growth and the nature of the medium. When cultivations have been placed in a brood oven so that the growth is abundant, it can be obtained much earlier than if they have been kept at the temperature of the room. This seems to be the only influence that the temperature at which cultivations are grown has upon the appearance of the reaction. The reaction appears earlier in media which contain peptone, and the intensity depends somewhat upon the amount of peptone present.

In cultivations upon beef-peptone agar-agar that have been placed in a cultivation oven, the reaction will often appear in from eight to twelve hours. Upon the addition of hydrochloric acid to such cultivations at first a red color spreads over the surface, and in the course of an hour is found to have extended into the deepest portions of the tube far from the bacterial growth.

The reaction in cultivations upon gelatin placed under the same conditions of growth appears at about the same time as in those upon agar-agar—*i. e.*, in from eight to twelve hours. When the acid is added, at first the fluid portions of the cultivation assume a bright rose-color, and then, as the solid portions are liquefied by the acid, these likewise take the same hue. If the fluid portions of the cultivation are first carefully poured off and the acid is then added, the solid portions of the gelatin, where there is no growth, assume the same color, showing that here, as in agar-agar, the agent which produces the reaction rapidly diffuses itself throughout the medium quite independently of the extent of the growth of the organism.

Dunham thought that for the production of the characteristic reaction it was essential that the nutrient medium should contain peptone. Jadassohn found, however, after a long series of careful experiments, in which the most varied media were employed, that the presence of peptone was not essential to the production of the reaction, as he also obtained it in nutrient solutions containing only albumin. A more characteristic and earlier reaction, however, is obtained in the presence of peptone than in the presence of a pure albumin alone. But, on the other hand, that the reaction does not occur in all solutions when the cholera spirillum is present, is shown by its failure to appear in cultivations in hydrant-water and solutions of starch, sugar, etc.

The second condition which is necessary for the production of the reaction is the free access of oxygen. The presence of oxygen is not essential to the growth of the cholera spirillum, but in cultivations where oxygen has been excluded by overlaying the media with a thin film of sterilized oil the color reaction is not obtained. If the oil is afterward carefully removed, after a short time the characteristic reaction can be obtained. Jadassohn found that the formation of the color product bore a direct and constant relation to the amount of oxygen present.

The question of the purity of the cultivation in reference to the reaction is one of great importance. Bujwid and Dunham have arrived at different conclusions regarding the necessity of this condition. Bujwid says "if the cultivation is not pure—*i. e.*, if it contains many other bacteria—the reaction does not take place." Dunham, on the other hand, obtained the reaction in the following experiment: He inoculated a tube containing a one-per-cent. solution of peptone with a mixture of cholera bacilli and human fæces, so that 43 per cent. of the bacteria present were cholera bacilli. In five hours he obtained the reaction with hydrochloric acid, but after twenty-four hours it disappeared. Jadassohn confirmed this observation. He found also that when tubes were simultaneously inoculated with the cholera spirillum and some other organism, after the growth of both organisms was abundant no reaction was obtained with hydrochloric acid and but little with sulphuric acid, but the characteristic color appeared when nitric acid was added.

Dunham only obtained the reaction in old impure cultivations by adding first sulphuric acid and then nitrous acid, but Jadassohn found that nitric acid answered the same purpose. Both Dunham and Jadassohn have made many test observations upon cultivations of other forms of micro-organisms, and especially upon the forms morphologically similar—viz., the Miller, Finkler and Pryor, and Deneke comma bacilli, and the Emmerich cholera bacillus. These four forms of organisms, with the *Bacillus pyogenes fœtidus*, are the only ones that gave color reactions to the mineral acids at all similar to that of the cholera spirillum. In the cultivations of these in peptone solutions, the addition of hydrochloric acid produced no change in color until the cultivations were many days old, and then the change was scarcely perceptible. Nitric acid brought out the characteristic violet-red color. Sulphuric acid produced a much less marked reaction than the nitric, and often no reaction.

In cultivations upon agar-agar the same general results were obtained. The color produced by the nitric acid had the same appearance as that produced in the cultivations of the cholera spirillum, but hydrochloric acid and sulphuric acid brought out no color. The reaction of cultivations of these organisms to the different acids is thus seen to be much the same as that found in impure cultivations of the cholera spirillum. That forms so similar morphologically should show such strikingly similar chemical reactions is certainly worthy of note.

Brieger has found that the violet-red coloring matter produced in beef-peptone gelatin cultivations of the cholera spirillum can be thrown down as a dirty red-brown precipitate by neutralization with soda; this he calls the color-base. It is dissolved by repeated shaking in benzene, and from this solution it can be obtained in brown-red scales. These scales are soluble in alcohol, in ether, and in chloroform. The alcoholic solution of the salt gives a dark band in the spectrum in D. He concludes that the cholera coloring matter is a true dye-stuff, does not seem to possess any poisonous qualities, and (as shown by other experiments) is an indol derivative. This last observation is significant, for, as has been shown, the color is only obtained in solutions of peptone or albumin, and indol, we know, is formed by the decomposition of albumin.

The diagnostic value of the reaction in cholera dejecta is a purely experimental question, and remains yet to be answered. But it is possible that the reaction to nitric acid, such as is shown in impure cultivations, may be also obtained with the dejecta, and may be of great value.

Jadassohn arrives at the following conclusions as the result of his experiments: 1. Pure cultivations of the cholera bacillus in a nutrient solution containing peptone after a short time give a red color upon the addition of hydrochloric acid, which as yet has been found in no other form of bacteria. 2. This color also appears upon the addition of nitric and sulphuric acids, but the reaction is less characteristic, because the nitric acid especially will produce the same color in somewhat older cultivations of the spirilla of Finkler and Pryor, of Deneke, and of Miller, and in cultivations of the Emmerich bacillus and the *Bacillus pyogenes fœtidus*. 3. The cause of the red color reaction in cultivations of the cholera spirillum is the presence of a substance formed only with the free access of oxygen from peptone or albumin, which, according to the investigations of Brieger, is a derivation of indol. 4. Impure cultivations of the cholera spirillum for the most part show the reaction only with nitric acid.

QUARANTINE.

As will be seen by the continued account of the proceedings of the recent meeting of the International Congress of Hygiene and Demography, given in our Vienna letter, much of the time of that meeting was devoted to questions bearing chiefly upon the prevention of cholera epidemics. The discussion was remarkable for Professor von Pettenkofer's repeated and emphatic declarations of his disbelief in the utility of quarantines as a means of protection against visitations of this disease. That noted epidemiologist even seemed to go so far as to deny the efficiency of preventive measures in general, although he probably made a mental reservation of personal and local cleanliness; for he made a point of the comparative mildness of the Bavarian epidemic of 1836, "when nothing was done against the spread of the cholera." The Munich professor was not supported by the meeting, for an almost unanimous vote was passed recommending an international convention to elaborate and enforce the measures advocated in the resolutions prepared by Dr. Vallin, Dr. Sonderegger, Mr. Murphy, and Dr. Finkelnburg. Substantially, those resolutions recognized the value of quarantine. It is evident, therefore, that the detention of passengers and merchandise from infected ports is still considered by the majority of European sanitarians to be one of the means to be trusted to in preventing importations of cholera. So far as we may infer from the Vienna discussion, the general sense of the meeting on that point was about the same as the opinion held by most of our own sanitarians, as exemplified in the uneasiness manifested from time to time by various boards of health in distant parts of the country as to the efficiency of the New York quarantine station and by reports lately made to several medical societies.

The latest of these reports, by a committee of the New York Academy of Medicine, will be found in full, with the omission of a few details, elsewhere in this issue of the Journal. This committee is popularly supposed to have been appointed at the request of the Mayor, for the express purpose of examining into the condition of the quarantine station and suggesting remedies for any shortcomings it might find—as the Mayor puts it, "to point out its defects and its requirements, in order to bring it up to the highest ideal standard of modern scientific and medical knowledge." As a matter of fact, the committee is the Mayor's only by adoption, so to speak, and it submitted its report to that officer only as a matter of courtesy. The committee was appointed at a meeting of the Academy held on the 3d of November. At that meeting, as our readers are aware, Health Commissioner Bryant read an important paper entitled "How the Medical Profession can aid the Board of Health," and it was after the paper had been read that Dr. Ellsworth Eliot moved the resolution under which a committee was appointed "to co-operate, when requested, with the Health Department, as suggested by Dr. Bryant." It seems, therefore, to be in a certain sense a standing committee, and its work in the matter of the quarantine station is to be viewed as only a part of what it may be expected to do.

But it is with this particular feature of its labors that we are concerned at present. The state of things which it depicts not only falls far short of "the highest ideal standard of modern scientific and medical knowledge," but is a disgrace to the assumed humanity of the people of the State of New York. As matters now stand, a decent and well-disposed immigrant would doubtless find his bodily health better cared for—to say nothing of his peace of mind—in almost any one of the State's jails or prisons than on Hoffman Island. Moreover, the hardships to which immigrants are there subjected are by no means balanced by the efficiency of the service in protecting the public health. Perhaps even the committee's report does not fully set forth the horrors of the place, but it shows abundant reason for the immediate institution of radical reforms. The report suggests these reforms in the most moderate terms, and it is to be hoped that its appeal may not long pass unheeded by the Legislature. It is announced, indeed, that a bill has already been introduced into the Senate containing provisions for improving the service. The State can not shirk the responsibility for the present deplorable condition of its quarantine station by allowing it to remain a bone of contention between various political rings or by pleading its expectation that the national Government will soon take the concern off its hands.

MINOR PARAGRAPHS.

THE MICROSCOPY OF THOUGHT.

Under this title, by which was meant an appreciation of the minute physical changes that go on in various parts of the encephalon as accompaniments of sensory, volitional, and motor processes, Dr. E. R. Maxson, of Syracuse, lately gave the Central New York Microscopical Club a very clear and interesting outline of the physiology of the brain. Attempts to make such matters comprehensible to persons who have not been trained in their study usually fall far short of success, but Dr. Maxson seems to have succeeded uncommonly well in the difficult task.

FUNERALS OF MEDICAL MEN.

We are glad to learn that the Academy of Medicine has given up the practice of inserting notices in the newspapers, in the announcements of deaths, inviting the members to attend the funeral of such and such a deceased fellow-member. The Medical Society of the County of New York would do well, we think, to follow the Academy's example. The theory of a brotherhood in medicine is very pretty, but the New York profession is now so large, and so many of its members belong to one or both of the societies mentioned, that the brotherly tie is hardly strong enough to lead to general compliance with the request expressed in the notices; but, as they are signed by the president and secretary, there seems to be an irksome obligation unfairly thrown upon those officers to act every now and then as public mourners.

FOREIGN QUALIFICATIONS IN BELGIUM.

The "Lancet" learns that a bill now before the Belgian Chambers is likely to take away from the Minister of the Interior and of Public Instruction the arbitrary power of granting or refusing licenses to practice. It seems that the present incumbent, M. de Volder, having been remonstrated with by a medical society for granting licenses to foreigners without an examination, replied that he had made up his mind to give no more licenses to foreign medical men. This is a matter in which we as a nation have little if any interest, as it is doubtful if there is a single American physician desirous of settling in practice in Belgium; but on general principles we should be glad to see that country make its policy in this respect conform to the reasonable requirement of an examination at which persons of all nationalities should be on an equality. And we should like to see our own legislative bodies do the same thing, and not, as they do now for the most part, open the portals wide to all possessors of a foreign degree.

A BRITISH ARMY SURGEON CONVICTED OF MURDER.

It is painful to read the proceedings in the recent trial of a retired surgeon-major of the British army, an account of which is given in the "British Medical Journal." The charge was that of having caused his wife's death by poisoning, and the apparent motive was his passion for another woman, to whom he was married on the fifteenth day after his wife's death, alleging as his reason that he had done her a wrong. The prisoner, a man sixty-three years old, denied his guilt, and addressed the court for half an hour, arguing the improbability of his having done the deed; but the evidence was strong against him, and he was convicted and sentenced to be hanged.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 3, 1888:

DISEASES.	Week ending Dec. 27		Week ending Jan. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	12	5	5	4
Scarlet fever	117	20	136	17
Cerebro-spinal meningitis	4	3	2	0
Measles	70	8	25	9
Diphtheria	138	58	143	62
Small-pox	1	1	1	0

The Health of Boston.—During the week ending Saturday, December 31st, the following numbers of deaths from infectious diseases were reported to the Board of Health: Diphtheria, 18 deaths; scarlet fever, 7 deaths. There were also 23 deaths from consumption, 29 from pneumonia, 2 from whooping-cough, 16 from heart disease, and 14 from bronchitis. The total number of deaths was 214, against 219 during the corresponding week last year.

The Randall's Island Hospital.—Dr. Charles H. May has been appointed visiting ophthalmic and aural surgeon to the hospital.

The Senate Quarantine Bill.—A bill has been introduced into the New York Senate which fixes the number of salaried officers hereafter to be employed, and places the Health Officer on a salary of $10,000. It amends the original act of 1863, section 53, by stipulating that, while the Health Officer shall be entitled to receive the fees fixed by law for his services, these fees shall not exceed the following amounts:

For inspection of every vessel from a foreign port, $5. For inspection of every vessel from a domestic port south of Cape Penelope, between the 1st day of May and the 1st day of November in each year, $1. For sanitary inspection of every vessel after the discharge of cargo or ballast, $10. For fumigation and disinfection of every vessel, $5; but no more than two fumigations or disinfections shall be charged for any one vessel at the same time. For boarding every vessel and giving pratique between sunset and sunrise at the request of the owner, consignee, or master of the vessel, when such pratique can be given without danger to the public health, $5. For vaccination of persons on vessels on board of which small-pox has been developed during the voyage, each 25 cents, but no charge shall be made for the vaccination of any person who shall have been successfully vaccinated by the medical officer of the ship.

The Health Officer shall, out of these sums thus collected, pay for the running of a steamboat for the transportation of persons to and from the establishment, for visitations and for burying the dead, and the salaries of Deputy Health Officers, and such bargemen, nurses, and stewards as will be necessary for conducting the Quarantine establishment, excepting the salaries of the Quarantine Commissioners, all of which is now required by law. In addition to these expenses he must pay the salaries of the following officers, to be appointed by the Commissioners: A secretary of the Commissioners of Quarantine, $1,800; a superintendent of Swinburne Hospital, $2,500; a superintendent of Hoffman Island, $1,500; an engineer of Swinburne Island, $1,150; an engineer of Hoffman Island, $1,050; a carpenter at Swinburne Island, $900; a laundress at Swinburne Island, $300; a boatman at Swinburne Island, $750; a boatman at Hoffman Island, $750. The Health Officer shall be entitled to receive a compensation of not less than $10,000 per annum. In case the aggregate amount of the fees remaining in his hands at the end of each year, after the payment by him of the salaries, wages, and expenses which he is required by law to pay, is less than the sum of $10,000, the Commissioners of Quarantine shall ascertain by proper proofs, to be approved by the Attorney-General and filed with the Controller, the amount of such deficiency, and shall pay the same to the Health Officer out of any unexpended moneys in their hands.

It is said that another bill will be introduced abolishing the Quarantine Commission and placing the whole establishment in the hands of the Mayors of New York and Brooklyn, the presidents of the boards of health of the two cities, and the president of some such commercial body, such as the Maritime Exchange.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 25 to December 31, 1887:*

Baxter, J. H., Colonel and Chief Medical Purveyor. Ordered to inspect the medical purveying depot at St. Louis, Mo. S. O. 296, A. G. O., December 23, 1887.

Banister, William B., First Lieutenant and Assistant Surgeon. Ordered to proceed to Fort Lowell, Arizona, and report to the commanding officer for duty, upon the arrival of Surgeon P. J. A. Cleary at Fort Wingate, New Mexico. S. O. 135, Department of Arizona, December 20, 1887.

Society Meetings for the Coming Week:

Monday, *January 9th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement (annual); Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *January 10th:* New York Medical Union (private); Medical Societies of the Counties of Chautauqua (semi-annual), Chenango (annual), Clinton (annual—Plattsburg), Erie (annual—Buffalo), Genesee (semi-annual—Batavia), Greene (quarterly), Jefferson (annual—Watertown), Livingston (semi-annual), Madison (semi-annual), Oneida (semi-annual—Rome), Onondaga (semi-annual—Syracuse), Ontario (quarterly), Oswego (semi-annual—Oswego), Rensselaer (annual), Schenectady (annual—Schenectady), Schuyler (annual), Steuben (semi-annual), Tioga (annual—Owego), Wayne (semi-annual), and Yates (semi-annual), N. Y.; Newark, N. J. (election), and Trenton, N. J. (private), Medical Associations; Norfolk, Mass., District Medical Society (Hyde Park).

Wednesday, *January 11th:* New York Surgical Society; New York Pathological Society (annual); American Microscopical Society of the City of New York; Medico-legal Society (anniversary); Medical Societies of the Counties of Albany and Dutchess (annual—Poughkeepsie), N. Y., Tri-States Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Hampshire, Mass., District (quarterly—Northampton), and Worcester, Mass., District (Worcester) Medical Societies; Bennington, Vt., and Hoosick, N. Y., Medical Society (annual—Arlington, Vt.); Philadelphia County Medical Society (conversational).

Thursday, *January 12th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society (annual and election); Medical Societies of the Counties of Cayuga, Fulton (annual—Johnstown), and Rensselaer (annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *January 13th:* New York Academy of Medicine (section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *January 14th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

OBITUARY NOTES.

William D. Schuyler, M. D., died on Saturday, December 31, 1887, at his house, in West Fifty-seventh Street, after a painful illness due to a malignant growth within the abdomen. He was born in Monroe County in 1834, and received his medical degree from the College of Physicians and Surgeons in 1869, after which he served as a member of the house staff of Bellevue Hospital and then of the Roosevelt Hospital. He was a member of the Academy of Medicine and of the Medical Society of the County of New York. Dr. Schuyler was a successful and highly esteemed practitioner. During the last three or four years of his life he contributed a number of articles to our columns, all of which showed great depth of thought and exceptional practical acumen. Most of them were on the subject of pneumonia, and we learn that a revision of them, together with additional matter, is shortly to be brought out in the form of a monograph. Dr. Schuyler was a man of great earnestness, happily blended with gentleness and considerateness. Both the bodily pain incident to his disease and the mental distress caused by the prospect of a speedy termination of his career of usefulness were borne by him with rare fortitude and resignation. By his death the profession loses one of its most honorable members.

Warner Cleveland, M. D., died at his house in New York on Sunday, the 1st inst., in the seventy-second year of his age. The deceased was a graduate of the Medical Department of the University of Vermont, of the class of 1847. At the time of his death he was a member of the Medical Society of the County of New York. For many years he practiced in Essex County, and he was at one time president of the Medical Society of the County of Essex.

Letters to the Editor.

PRIVATE VENTURES IN COLLECTIVE INVESTIGATION.

To the Editor of the New York Medical Journal:

Sir: Permit me to congratulate you upon your timely protest against mob-rule in therapeutics. Your timely editorial against "Private Ventures in Collective Investigation" will appeal to the practical intuitions of every physician. Who can adequately describe the mental torture caused by the man who is continually bombarding you with requests to give your "experience" upon points of medical and surgical practice of which he himself is, perhaps, totally ignorant, or only partially informed? Such creatures are the veriest hawks of science; they are no more to be confounded with those painstaking investigators who, by their original work, help to lend momentum to the medical machine, than rancid oil is to be confounded with Croton water! Away with them all!

Country Practitioner.

To the Editor of the New York Medical Journal:

Sir: I have read with pleasure your editorial on "Collective Investigation." You indeed merit the thanks of the profession for exploding this humbug. Who are these creatures who are sitting in judgment upon the deeds of other men? Have they ever done anything themselves? Most assuredly in the majority of cases they have not, since they give but the attenuated echo of other people's doings. There is hardly room for more of this scientific oleomargarine; it has already caused too much mental dyspepsia, and the Board of Health should quarantine it.

Veritas.

A SUBSTITUTE FOR BRAN BREAD FOR DIABETICS.

Kiowa, Kansas, *December 20, 1887.*

To the Editor of the New York Medical Journal:

Sir: Having recently a patient suffering with diabetes, it became necessary to make a substitute for the "staff of life," and I had my druggist write for the price of bran flour. The manufacturers demanded so much as to practically place the flour beyond the reach of the poor. The formula for bread made from potatoes from which the starch had been removed was then tried, but did not prove satisfactory. The following formula, however, has proved successful, and by its use the patient has passed three months without the least desire for bread, the urine becoming normal, and he has gained ten pounds in weight.

No drugs have been used, except an ounce of whisky with each meal. This formula may be known, but, having never seen it, I give it for the benefit of others, and, if in all cases it is as successful as it was in this one, it will demonstrate to the bran manufacturer the truth of the proverb *sibi ipsa semper aviditas nimia officit:*

Six eggs are thoroughly beaten, and then a teaspoonful of baking-powder, or its chemical equivalent, and a quarter of a teaspoonful of salt are added, and again the eggs are beaten. This mixture, poured into hot waffle-irons smeared with butter, is baked in a very hot oven. For variety and to make these biscuits seem more like coarse bread, pulverized nuts of those permitted may be added. They may be eaten hot with butter and cheese, but will remain good for a long time, and nobody would suspect that they were destitute of flour.

W. T. O'Donnell.

BACTERIOLOGICAL CLASSIFICATION NAMES.

Delmont, Pa., *December 26, 1887.*

To the Editor of the New York Medical Journal:

Sir: In the matter of the minute organisms that enter so largely into modern pathology, I think we have rather a confusion of terms. We have microbes, bacteria, micrococci, bacilli, etc., as vegetable organisms. We have ptomaines as products of animal putrefaction. Now, of the former class, which are general and which particular? Are we to consider the microbe as the genus and the others as the species? I should like to see a biological classification of the subject in the Journal.

U. M. Snyder.

⁂ It would be difficult, perhaps impossible, to give a satisfactory classification of the pathogenetic micro-organisms at present. Microbes is a general term for all micro-organisms. Bacteria is commonly used in a sense nearly as wide, but in the singular, *Bacterium*, it is the name of a genus; so are *Micrococcus* and *Bacillus*. Our correspondent does not mention any species names. They are almost as the leaves of the forest in number, and many of them, as well as of the genus names, are used differently by different writers.

Book Notices.

A Hand-book of Diseases of the Skin, with Especial Reference to Diagnosis and Treatment. By Robert Liveing, A. M., M. D. Cantab., F. R. C. P. Lond., Physician to the Department for Diseases of the Skin at the Middlesex Hospital, etc. Fifth Edition, revised and enlarged. London and New York: Longmans, Green, & Co., 1887. Pp. viii–451.

This book is one of the best of the shorter treatises upon skin diseases. In 1880 its author combined his two books (one upon the treatment, and the other upon the diagnosis of the diseases of the skin) into one book, and it is a new edition of this which is now before us.

The opening chapters upon classification, nomenclature, and diagnosis are judicious, and we heartily agree with the author in his plea for a simpler nomenclature and for the discarding of superfluous terms. Pye-Smith's table of "diseases of the skin regarded as anatomical conditions of certain layers, organs, or regions" is given on page 43, with some additions and alterations. This will be found helpful for purposes of diagnosis. The sections upon the various cutaneous diseases are well done, the symptomatology being clearly put, and the diagnosis given very fully. The methods of treatment advised are not so fully described nor so numerous as the title of the book would lead us to believe, and in some cases treatment is entirely omitted, as in the section on favus. The closing chapter of the book, which treats of therapeutics, is a useful one, containing a short account of the leading European spas, with indications for their use, and a long list of formularies. The book is readable, and shows in every part a thorough mastery of the subject.

Hygiène Infantile. Causes de la morbidité et de la mortalité de la première enfance à Buénos Ayres. Par le Docteur Émile R. Coni, Membre honoraire de l'Association Médica Bonaereuse du Círculo Médico Argentino, etc. Ouvrage couronné au concours Rawson par la Faculté des Sciences Médicales de Buénos Ayres. Buénos Ayres: Paul, 1886. Pp. xix–228.

This essay is chiefly commendable for its industrious compilation and careful analysis of statistics having a purely local bearing, and in this respect is a work of great importance, which can scarcely fail to lead to good results. To the North American or European reader its main interest lies in showing that the same insanitary conditions which we deprecate at home exist wherever ignorant humanity is congregated in nominally civilized communities, and with nearly the same consequences. In Buenos Ayres, as in New York, an appalling part of the mortality and morbidity of infancy comes under the generic head of "athrepsia," and is due to maternal ignorance of hygiene and maternal disinclination or inability to supply to infants their only proper food. There, as here, faulty domiciliary circumstances, lack of light and ventilation, overcrowding in the dwellings of the poor, bring their train of scrofula, tuberculosis, and the long procession of maladies arising from malnutrition. There, as here, filth furnishes the soil wherein exotic infection takes root and becomes endemic. We learn that Buenos Ayres shares in the monopoly of the western continent in the matter of trismus neonatorum, which the author ascribes to cold and dampness, conjoined with want of care and insanitary surroundings. To the same causes, but especially to dampness, he assigns a notable prevalence of noma, which he regards as closely allied to aphthous stomatitis.

In one respect, however, the Argentine capital differs widely from most of our northern cities; with a marriage-rate of 8 to the 1,000, its birth-rate ranges from 38 to 40 in a 1,000 of the population, and of these births 15 per cent. are estimated to be illegitimate. As a natural result, the mortality from infantile syphilis is very large, not counting the numerous still-births probably due to this cause, or the undoubtedly many cases where a euphemistic death-certificate is given to avoid publicity.

The measures of state medicine recommended by the author to diminish the sacrifice of infant life are: To lessen illegitimacy by removing the legislative obstacles which now impede marriage; to encourage mothers to nurse their offspring, and to establish a supervision over mercenary wet-nurses; to open lying-in hospitals for the poor, apart from general hospitals, with provision for home attendance where it is requisite, and to found *crèches* for the care of children during the working hours of the mother's day; to promote by law the hygienic construction of tenements for the laboring classes, and to enforce isolation of contagious diseases; to make vaccination and revaccination compulsory; and to suppress clandestine prostitution and create a special sanitary bureau to limit the propagation of venereal disease.

BOOKS AND PAMPHLETS RECEIVED.

Dr. G. Beck's Therapeutischer Almanach, 15. Jahrgang, 1888. 1. Semester. Bern: Schmid, Francke, & Co., 1888.

Some Observations on Headaches in Children and their Relation to Mental Training. (Read in the Section of Diseases of Children at the International Medical Congress held at Washington, September, 1887.) By William Henry Day, M. D., Member of the Royal College of Physicians of London, etc. London: J. & A. Churchill, 1887.

As to Yellow Fever. By John P. Wall, M. D. [Reprinted from the "Florida Times-Union."]

Aerztlicher Bericht über die Thätigkeit des Carlsbader Fremdenhospitales in der Saison 1887. Erstattet vom Director der Anstalt Dr. August Hermann. [Sonderabdruck aus der "Prager medicin. Wochenschrift."]

Conduite à tenir dans l'avortement. Curage et écouvillonnage de l'utérus pour l'extraction du placenta retenu dans la matrice. Par J. A. Doléris, Ancien chef de clinique d'obstétrique et de gynécologie de la Faculté de Paris, etc. [Publication des "Nouvelles archives d'obstétrique et de gynécologie."]

Périnéorrhaphie immédiatement après l'accouchement au moyen des sutures ou en spirale, avec les fils de catgut résorbables. Par le Docteur Doléris. [Extrait des "Archives de tocologie."]

Étude sur l'histologie pathologique du placenta abortif. Par George Zinowieff, Docteur en médecine de la Faculté de Paris. [Publication des "Nouvelles archives d'obstétrique et de gynécologie."]

Recherches expérimentales sur l'intoxication par le sublimé corrosif, employé pour le lavage des muqueuses saines et des plaies. Par MM. Doléris et L. Butte. [Publication des "Nouvelles archives d'obstétrique et de gynécologie."]

Du raccourcissement des ligaments ronds. Par J. A. Doléris, Ancien chef de clinique d'obstétrique et de gynécologie de la Faculté de Paris, etc. [Publication des "Nouvelles archives d'obstétrique et de gynécologie."]

Traitement et restauration du col de l'utérus pendant la grossesse. Par J. A. Doléris, de Paris, etc.

Reports on the Progress of Medicine.

OBSTETRICS AND GYNÆCOLOGY.

By ANDREW F. CURRIER, M. D.

The Treatment of Uterine Tumors by Electrolysis ("Brit. Med. Jour.," Oct. 1, 1887, editorial).—Two important papers upon this subject are published in this number of the "British Medical Journal," one by Dr. Apostoli, of Paris, and the other by Dr. W. E. Steavenson, of London. Both were read at the recent meeting of the British Medical Association at Dublin. Apostoli recapitulates the work of his predecessors in this line, stating that their methods were empirical, that they had no system of measuring the force of the electrical current and of regulating its dosage, and that they adopted the objectionable plan of wounding the abdominal tissues above the pubes with their needles. In contrast with all these he asserts that by his method there is an accurate and scientific measurement of the current, that great strength of current may be used without detriment to the patient, and that there are no punctures above the pubes. He also states that the action of the positive pole is hæmostatic, while that of the negative pole is to lower the nutrition of the parts. He considers the chemical effect of the cauterization produced by the current as the potent influence rather than the thermic effect. If, as he asserts, the electrical current acts upon every molecule of tissue in the structure through which it is passed, and so must produce important changes, the fact is of very great value. Antiseptic measures are of great importance in performing operations upon tumors by his method, which should by no means be considered minor operations. The too violent application of the negative pole must also be avoided. His statistics are not sufficiently minute in their details. Steavenson lays special stress upon improvements which he has made in his electrodes, which are of flexible copper wire, ending in a short piece of platinum. They are cheaper than the long platinum rods for electro-puncture, and are easier to introduce and safer than Apostoli's rigid platinum ones. Steavenson thinks that the treatment of myomata by electricity is neither so easy nor so free from danger as Apostoli would have us believe. Those who use electrolysis should be sure that they understand the medical and surgical uses of electricity. He approves of Apostoli's method for the treatment of bleeding fibroids, and thinks it has been fairly successful in checking the growth of large fibroid tumors. It is questionable whether this method will ever supplant the purely surgical methods of treatment. If Apostoli's method is adopted, one must not only remember the precautions which he has suggested, but be on the lookout for unforeseen dangers, especially if the method is used extensively in dispensary practice.

Apostoli's paper has started a lively correspondence with the "British Medical Journal," letters from Mr. Lawson Tait and Dr. Julius Althaus appearing in the issue of October 29th, and from Dr. W. S. Playfair and Dr. R. Milne Murray in the issue of November 5th. Mr. Tait refers to his own experience with electricity and to the information upon this subject which he obtained in 1868 from Dr. Althaus. To Apostoli's five statements as to the defects in the methods of his (Apostoli's) predecessors in the use of electricity he offers "a categorical contradiction." The methods which he adopted eighteen years ago were not different, he affirms, in principle nor in essential methods of application from those which are now advocated as entirely new by Apostoli. He does not deny that Apostoli may be correct in his statements as to the effects of his treatment, but he deprecates the general use of the method by those who are not sufficiently informed upon the subject. Dr. Althaus thinks that his work in this field has been overlooked by Apostoli, and does not admit that the method which he (Althaus) used was defective as to dosage, as to the end aimed at, or as to results. The wet clay electrode of Apostoli was used forty years ago by Du Bois-Reymond in electro-physiological researches, and the term galvano-chemical cauterization originated with Tripier. The hæmostatic effect of the positive pole was also suggested by him (Althaus) twenty years ago. Dr. Playfair thinks favorably of Apostoli's work, and, in so far as he has followed his method, he has been satisfied with the results. He is entirely in favor of giving the method a fair trial and testing it upon its merits without particular reference to what may have been done by previous workers in this field. Dr. Murray warmly approves Apostoli's method, and considers the use of the milliampèremeter a great advance over previous methods of registering current strength, whether by means of the galvanometer or the notation of a certain number of cells. The present method is considered a decided step in the direction of accuracy as to nomenclature and usage of a powerful and important therapeutic force.

The Sectional Anatomy of the Third Stage of Labor.—Barbour ("Edinburgh Med. Jour.," Nov., 1887) summarizes the anatomical and physiological points in his paper as follows: (*a*) 1. No sections of the whole cadaver from the third stage have yet been made. 2. Porro uteri show that the placenta can follow a diminution of its site to 4 × 4½ inches without separation, and that this amount of contraction and retraction brings the wall into contact with the placenta all around. 3. Stratz's sections of the uterus and placenta are the only ones we have, as yet, from the third stage, but are of the uterus removed from the body. The one which illustrates placenta prævia shows the placenta separated, and the uterine walls embracing the placenta, which is presenting by its edge. The one which illustrates eclampsia shows absence of contraction and retraction over the unseparated portion. (*b*) 1. The question of separation of the placenta must be kept quite distinct from that of its expulsion. 2. Evidence is accumulating that, at the commencement of the third stage, the placenta is still as a whole or in great part attached. 3. Diminution in the area of its site to 4 × 4½ inches does not mean separation of the placenta. 4. Diminution of area beyond the foregoing limits, plus the action of the uterus as a whole upon the placental mass, is considered the formal cause or force which tends to produce separation, and the pains of the third stage are the efficient cause or agent through which the force acts. Effusion of blood is an accident and not essential. 5. During the contractions of the third stage the surface of the placenta is thrown into heights and hollows; the heights do not necessarily mean effusion below. 6. The placenta usually descends with its edge, or a point near its edge, first, as Duncan described; though sometimes the fœtal surface comes first, as Baudelocque and Schultze described. The third stage is regarded as a second labor in miniature. The pain which expels the child is followed by a pause, during which the placenta is still as a whole or in great part attached; then labor comes on again, and the placenta is first detached and then expelled. This second labor is not always marked off by a distinct interval from the first, for one long pain may expel the child, and then detach and expel the placenta.

The Notion which is implied in the Term Castration (Hegar, "Ctrlbl. f. Gyn.," Oct. 29, 1887).—The term ovariotomy in all medical literature means only the removal of ovarian tumors of considerable size. Hegar originated the use of the term castration to signify the removal of the female reproductive glands in the same sense as it is used by surgeons for the removal of the analogous organs in the male, and by veterinarians for the operation upon either sex. The synonyms oophorectomy and normal ovariotomy have been discarded—the latter because it is seldom applicable. Tait's operation, or the removal of the uterine appendages, had been performed by the author and others before it received this name, Tait laying more stress upon the importance of the tubes and their removal than the others did. Similar remarks might be made in regard to the term salpingotomy. The object of castration is twofold: to remove an organ which is a source of irritation on account of pathological changes, and to bring to a conclusion the functions of ovulation and menstruation. The advantages of the anticipated climax were originally pointed out by Hegar, also collateral effects which might be expected from the ligation of certain vessels, stretching of bands, tearing of adhesions, effecting mobility in organs previously immobile, correction of uterine displacement, and the causation of a profound mental impression. According to Martin, Schröder, and C. Ruge, it is essential to the notion of castration that the ovaries be healthy and that recovery be dependent upon one mode of action—the anticipated climacteric. Martin even wishes to limit the term to those cases in which normal ovaries are removed for the purpose of producing an effect upon the sexual life—that is, upon psychoses which are involved in the cases. The definition of these authors is open to the objection that it involves a complex notion, referring both to the health of the organ which is to be removed and the method by which a cure is to be effected. Prochownik's definition is a better one, castration signifying to him the removal of the ovaries for the purpose of producing the menopause, irrespective of the health or disease of the ovaries. The knowledge concerning the relation between ovulation and the functions of the uterus, and concerning the influence of a cessation of activity of the ovaries upon the system at large, the nervous system, and the mind, is yet too indefinite to be formulated in any definition of castration. Again, Martin, in the second edition of his book on "The Pathology and Treatment of the Diseases of Women," considers that all castrations for myoma should be called ovariotomies, thus apparently discarding the consideration of the physiological condition of the organ in his definition. Whether the operation is called ovariotomy or castration, it is important to remember in giving a definition that the operation and the indication which calls for it are quite distinct, and this whether the indication is pelvic peritonitis, an affection of the tubes, or an affection of the ovaries. The fine distinctions which Ruge makes between ovaries which are anatomically diseased, though clinically not diseased—that is, the cystic degeneration, for example, which can not be ascertained by palpation—are considerations which ought not to enter into a definition of castration. The author believes, therefore, that the original idea as enunciated by him is better calculated to express the facts concerned in castration than any of the recent improvements and refinements.

Parotitis following Ovariotomy.—This complication was observed by Bumm ("Ctrlbl. f. Gyn.," Oct. 29, 1887) in the records of seventeen ovariotomies. The swelling of the gland was first noticed between the third and the eleventh or twelfth days after the operation. In two of the cases the sublingual and the submaxillary glands were also inflamed. It does not follow that the inflamed parotid will be on the same side of the body as the ovary which is extirpated. In nine of the cases the inflammation was of a suppurative character. Möricke considers this a serious complication. It would seem as if it were more likely to occur in cases in which the removal of the tumors was rendered difficult by adhesions. Most writers who have alluded to this subject at all regard this inflammation as an effect of the extirpation of the ovaries, though Keith believes it is entirely an accident. No better explanation of its cause can be offered than the well-known sympathy which exists between the salivary and the reproductive glands, irritations of the ovaries leading to vaso-motor disturbances in the parotids, and this being followed by inflammation. If no new factor supervenes, the process may continue as a simple inflammatory one, and end spontaneously. According to present knowledge, suppuration can only occur after the entrance of pyogenic micro-organisms which have been found to belong to the species *Staphylococcus aureus*. The drying up of the salivary secretion, which is not infrequently observed after ovariotomy, may be looked upon as an element of proof that the micro-organisms enter the system at the time of the operation.

Endometritis during Pregnancy.—Among the causes of abortion, says Veit ("Ctrlbl. f. Gyn.," Oct. 29, 1887), endometritis should receive greater consideration than has usually been accorded to it. The author prefers to call this variety *endometritis gravidarum* rather than *endometritis decidualis*. The changes in the ova which are cast off in connection with this condition are uniform, and they are not caused merely by the death of the ova. Abortion from this cause is good evidence that the disease existed previous to impregnation, but not necessarily that it was severe. The placenta in such cases will usually be found to have undergone pathological changes. The discovery of evidences of disease in ova which are cast off from this cause is not easy. Clinically the symptoms are pain, hæmorrhage, etc. In certain cases which came under the author's notice an examination showed very firm contracting power of the uterus, but only partial relaxation, with peculiar forms of tension, etc. To this variety belong many cases in which abortion is habitual, or in which there may be hydrorrhœa of the gravid uterus, obstruction in connection with an anteflexed gravid uterus, or the so-called uncontrollable vomiting of pregnancy. The principal suggestion which is to be made in regard to these cases is that they be carefully watched, and the accident prevented by suitable prophylaxis.

Laparotomy in connection with Tuberculosis of the Peritonæum.—Fehling ("Ctrlbl. f. Kinderh.," Nov. 5, 1887) read a paper before the gynæcological section of the sixtieth meeting of the Society of German Naturalists and Physicians. He considered it noteworthy that exploratory incisions of the abdominal wall were displacing exploratory punctures. With antiseptic precautions, the former were not dangerous. In recent years one meets with tuberculous changes in the peritoneal region more frequently than used to be the case. The results of exploratory incisions in such cases are so satisfactory that they demand further investigation, especially because an explanation is not yet possible. Three cases are narrated by the author in which the results warrant their detailed account:

1. A multipara, thirty-four years of age, suffering from amenorrhœa and emaciation. Above Poupart's ligament of the right side there was found a tumor as large as an orange, which was thought to be a development from the right ovary. There were small nodes behind the uterus on either side, but no ascites, and a suspicion of a malignant growth. An exploratory incision showed that the tumor was the cæcum changed to a round tumor by deposits of tubercle. Within the tumor were also included the vermiform appendix, and loops of the small intestine with their mesentery, all being infiltrated with tubercle. Behind the uterus the Fallopian tubes were pressed down in the form of a rose-cross. The incision was followed by great improvement without any particular reaction.

2. A multipara, twenty-four years of age, had a severe attack of peritonitis six months before she came under the author's observation. When seen by him she had a tumor supposed to be ovarian extending from the anterior spine of the ilium on the right side to the umbilicus. It revealed deep fluctuation and rumbling upon palpation. As she had suffered from a precedent attack of pleurisy, the diagnosis of tuberculosis was made and the abdomen was opened for the purpose of removing what was supposed to be an encapsulated mass of exudate.

The intestines were so matted together and so extensively attached to the abdominal wall that it was impossible to reach the free abdominal cavity. In the course of the operation the intestines were wounded and were sutured. The operation was followed by recovery, the patient gaining eighteen pounds during the succeeding three months.

3. A woman, twenty-five years of age, who had given birth to a child two years and a half previous to the author's acquaintance with her, and six months previously had been punctured for the removal of ascitic fluid. Since that time she had been bedridden, with fever during much of the time. On her left side was a fluctuating tumor which extended above the navel. A diagnosis of encapsulated ascitic fluid of tuberculous origin was confirmed by incision. A drainage-tube was passed through the vagina, and the sac of the tumor was attached to the abdominal wall. A portion of the latter was excised and found to contain tubercles. The intestines were also covered with tubercles. The wound was recovered from, and there was marked general improvement. The author has been struck with the varied forms which are assumed by tuberculous peritonitis. Of forty recorded cases in which operations have been done, only two occurred in men. Considering the frequency of tuberculosis of the male genital organs, it seems a little peculiar that primary tuberculosis of the peritonæum should be so infrequent. It would seem probable that tuberculosis of the peritonæum in women was secondary to tuberculous disease of the tubes; the lungs in such cases may be uninvolved. Of twenty-nine recorded cases of tubercular peritonitis, in twenty-one there was encapsulation of ascitic fluid; six of the patients died, and fifteen were relieved, eight for more than a year. Of five cases in which there was free ascitic fluid, two patients were relieved and two were cured. A long incision is usually to be preferred, and drainage *per vaginam* when possible. The curative effect of the operation does not consist in the iodoform or sublimate which may be used, but probably upon destructive changes which are exerted upon micro-organisms; or possibly it may be due to improved conditions of the circulation. It must not be forgotten that a spontaneous cure sometimes occurs. The author can not agree with Kümmel in considering peritoneal tuberculosis a local condition of the same grade as tuberculosis of the joints, for the anatomical conditions are entirely different. The long duration of the process and the apparently slow course of healing depend upon conditions similar to those which effect such a different result in pulmonary tuberculosis. The prognosis for operations in peritoneal tuberculosis is therefore not as hopeless as it would once have been considered.

The Performance of Obstetrical Operations in Water.—Kaschkaroff ("Ctrbl. f. Gyn.," Nov. 5, 1887) says that, since water can be sterilized more readily and certainly than air, it occurred to him that an apparatus could be constructed which would enable one to operate under a water-mirror. The water should be warm and disinfected, and should be constantly renewed at a uniform rate. The apparatus (which is in course of construction) should contain only sufficient water to immerse the lower half of the abdomen and the genital organs. Such operations as turning and craniotomy have already been done several times by the author, with good results, under water which was neither disinfected nor changed in the course of the operation. A century ago Aitken showed that Cæsarean section could be done more safely if it were done in an elevated temperature. Various attempts were made by surgeons to operate under water before the days of bloodless operations, but the discoloration of the water caused the attempts to be abandoned.

Reports of the Obstetric Service at the Maternity at Marburg.—According to Ahlfeld (*ibid*), since 1883 antiseptic precautions have been gradually perfected in this maternity. At the present time each woman who is about to be confined receives a full bath, after which clean garments are put upon her. The vagina and external genitals are carefully disinfected with a douche of hot sublimate solution (1 to 2,000). The attendants wear clean white trousers and aprons. Accidents from the use of sublimate have been very few and never severe, and Ahlfeld recommends that it be employed systematically by midwives. It is contra-indicated, however, in anæmic women, in placenta prævia, in cases in which mercurial treatment has been used for other conditions, and in nephritis. Ahlfeld lays great stress upon the natural treatment of the placenta—that is, non-interference in its expulsion as opposed to Credé's plan. He believes that by the natural method there is less bleeding then and subsequently, and less danger of puerperal fever. These views are the result of his experience since 1880. Credé's plan is admitted to be the best if there is profuse hæmorrhage which does not cease by mild rubbing of the abdomen over the uterus, in placenta prævia, and in cases in which there is infectious fever with tympanites uteri, following parturition. It is confidently asserted that the natural non-interfering treatment of the placenta has so many advantages that it must ultimately displace Credé's.

Self-infection.—Ahlfeld ("Ctrlbl. f. Gyn.," Nov. 12, 1887) says that the axiom that there can be no such thing as self-infection after a normal parturition is effectually exploded. Winckel has shown that it has occurred in women who have given birth to their children *in the street*, in which there could be no question of infection from the hands or instruments of physicians or midwives, and Ahlfeld has demonstrated the same by experimental investigations. The author understands by self-infection, with Semmelweiss, a condition in which the poisonous matter exists upon or in the genital organs at the time of parturition, or is developed during parturition or the puerperium. The infection may or may not be communicated to the patient during the manipulations of the physician or midwife. A sharp distinction between infection from without and self-infection does not seem to be possible; it is therefore difficult to say, in most cases, that the physician or the midwife is responsible should puerperal fever make its appearance. It is only recently that stress has been laid upon the influence exercised by micro-organisms upon the vulva and the external genitals, and this has led to undoubted improvement in the condition of puerperal women in general. It is now admitted that if pathogenetic spores are found in the vagina of a woman who is otherwise in good condition, disease may result, though there is still uncertainty as to whether they are developed in the vagina previous to parturition by their entrance into the tissues, or through the process of their proliferation. A fatal result from blood-poisoning or septic peritonitis may occur even though the patient may not have been touched by a physician or other attendant. Cases are narrated in which the evidence of septic infection from retained and putrefying products of conception is clear and convincing, poisoning from the absorption of ptomaines being admitted. The author does not agree with Kaltenbach in his belief that puerperal disease from such a cause is of rare occurrence.

The Consensus between the Organs of Generation in the Female and the other Organs.—Baart de la Faille (*ibid.*) says that at puberty the influence of the ovaries upon the other organs is most significant, and during menstruation indications of disease of various forms are especially prone to appear. Among such diseases and diseased conditions may be mentioned migraine, prosopalgia, nausea, vomiting, cardialgia, constipation, disturbances in the circulation of various kinds, and cutaneous eruptions, such as erysipelas, acne, and erythema. At puberty, also, disturbances of nutrition become prominent, such as chlorosis and anæmia, neuroses such as hysteria, disturbances both in the cerebro-spinal and the sympathetic systems, including chorea, epilepsy, hyperæsthesiæ, and anæsthesiæ. There may be psychical disturbances which are apparently dependent upon the process of ovulation, such as excitability, melancholia, pyromania, and nymphomania. To these might be added aphonia, spasm of the glottis, hyperæmia and anæmia of the brain, epileptic spasms, etc. During gestation the troubles associated with the uterus are conspicuous, and, in addition to obstinate vomiting, one meets with prosopalgia, migraine, insomnia, chorea, ptyalism, cough, pernicious anæmia, and of the cutaneous diseases urticaria and pemphigus. Albuminuria with or without eclampsia may obtain. If eclampsia is present, it is probably due to the reflex action of the uterus upon the medulla and the cerebrum. Cases are also narrated in which there was embolism of the pulmonary artery and puerperal phlebothrombosis which extended from the vena saphena to the vena cava inferior. Collapse occurred in four cases, two of which were fatal. During pregnancy it was observed that some diseases were retarded, for example tuberculosis and epithelioma uteri. In two cases heart disease was fatal during gestation. Repeated pregnancies may be accountable for osteomalacia or the development of osteophytes. Acute atrophy of the liver was observed in one case in the eighth month of pregnancy which was fatal in four days. After parturition one is accustomed to see a pendulous abdomen, hæmorrhoids and varices, perhaps metrorrhagia and displacements of the uterus, and sometimes, as a consequence, hemicrania, clavus hystericus, singultus, cardialgia, and weakness of the heart. Of other conditions associated with uterine disorders the author observed nine cases of diabetes. Diseases of the eyes have been frequently observed in connection with uterine disease, though the exact relation has not yet been definitely determined.

Dilatation of the Uterus by the Process of Progressive Obturations.—Vulliet ("Nouv. arch. d'obst. et de gyn.," Oct. 25, 1887) devised in 1883 the method of dilatation by progressive tamponings. It consists: 1. In the obturation of the uterine cavity by means of substances which are incapable of causing traumatism or infection. 2. In the gradual increase of the volume which is composed of these foreign bodies. The substance which is used for the purpose of dilatation by the author is antiseptic cotton, which is immersed, before its introduction into the uterus, in an ethereal solution of iodoform. The iodoform may be to the ether as 1 to 10, or as 1 to 30, according to the number of cotton pledgets, and therefore the quantity of iodoform which is to be used. The pledgets must not be introduced until the ether has entirely evaporated, for that substance is very irritating to the uterine mucous membrane. The tampon is applied while the patient is in the genupectoral position, the entire cavity being occupied by the pieces of cotton, but without the expenditure of undue force. After forty-eight hours the tampōn is removed, and a more voluminous one is immediately applied. As the dilatation progresses, the shape of the cotton column should be modified in accordance with the end which is to be accomplished by the dilatation. The author has found that six to eight tamponings are usually required in the course of fifteen to twenty days to obtain the degree of dilatation which may be necessary. The tolerance of the uterus for such treatment is quite astonishing. There is not apt to be any reaction, or if there is it takes the form of colicky pains, which never take the character of true expulsive pains. There are no septic accidents; in fact, if sepsis previously existed, it will be relieved or attenuated. The effect of the treatment is also hæmostatic, and it may be considered analogous to the treatment with the permanent catheter in urethral affections. The following conclusions are submitted: 1. It solves the problem of endoscopy; it enables us to diagnosticate, to make dressings, to operate, and to inspect the results of operations even to the deepest portions of the uterus. 2. It affords an excellent antiseptic dressing. 3. It gives us permanent instead of very brief dilatations, thus enabling us to repeat any necessary interference. 4. It is very serviceable in cases in which plastic modifications are desirable. 5. It acts upon certain neuroses which seem to radiate from the uterus in the same way as pregnancy. It may be objected that it is a slow process, but in the interest of good practice it is not desirable to hasten such processes.

The Treatment of Uterine Cancer in its Advanced Stages by Terebene.—Betrin (*ibid.*) does not question that, in the early stages of uterine cancer—that is, before the vaginal *culs-de-sac* are invaded—surgical methods of treatment are the most appropriate, whether they consist in amputation of the portio vaginalis, supravaginal excision of the cervix, or removal of the entire organ by the vagina. In more than three fourths of the cases which appear at the public dispensaries, however, the disease has already reached such an advanced stage that such operations are not feasible; the treatment of such cases must therefore be merely symptomatic. Three principal symptoms call for active attention—hæmorrhage, pain, and offensive discharges. The hæmorrhages may be relieved by the use of the curette, the diseased tissue being scraped away as thoroughly as possible, and this being followed by the use of the actual cautery, or such potential caustics as acetic acid and chloride of iron. The pain, which is often very severe in the pelvis, legs, thighs, kidneys, etc., may be treated with opium in various forms, cocaine, chloral, etc. The discharges, which not only are annoying on account of their offensive odor, but give rise to painful irritation upon the parts with which they come in contact, are to be relieved by means of antiseptic dressings, and for this purpose terebene has been successfully used by the author for a number of years. Before it is applied, it is recommended that the vagina be carefully irrigated with a sufficiently concentrated solution of permanganate of potassium, bromine, or chlorine. The terebene may be combined with equal parts of some fatty oil, pledgets of cotton may be saturated with it, and these may be applied as a tampon, Sims's speculum and Sims's posture being used for the purpose. The operation should be repeated every two or three days, according to the abundance and offensiveness of the discharge. The result of this treatment has been very satisfactory, and seems to retard the progress of the disease. The question of the bacterial origin of cancer is yet an open one. It is quite certain, however, that there are countless numbers of bacteria in the vagina and uterus during the progress of that disease, and the action of terebene in destroying them and producing a disinfection of the parts to which it is applied can not but be beneficial.

Obstinate Vomiting not connected with Pregnancy; Dilatation of the Cervix Uteri.—Boissarie ("Ann. de gyn.," Oct., 1887) remarks that ten years ago Copeman published in the "British Medical Journal" a series of cases in which obstinate vomiting in connection with pregnancy was relieved by digital dilatation of the *cervix uteri*. It occurred to the author that the same plan might be applicable in cases of obstinate vomiting not associated with pregnancy. This method was therefore adopted in a case which he has narrated in this paper with a perfectly satisfactory result. The sympathy which exists between the uterus and the stomach explains the success of this plan of treatment. This sympathy, which is most evident during pregnancy, is manifested in some women with each recurring menstruation. Dilatation is therefore a rational means of treatment for troublesome vomiting in women, not only during pregnancy, but also during menstruation and perhaps at other times.

The Painful Variety of Cystitis.—Hartmann ("Ann. des mal. des org. gén.-urin.," Nov., 1887, "Paris thesis," 1887) says that in certain conditions cystitis is characterized by intense pain, whatever be its variety or origin. The subject is therefore one of great importance, and forms a basal idea for treatment without regard to the pathogenesis or prognosis of the disease. The author first studies the conditions of the development and the characters of the symptom pain in bladder diseases, and then proceeds to the subject of treatment, whether medical or surgical. He disapproves of the distension of the bladder by means of voluminous injections under any pretext, believing that it is likely to produce exacerbations of the painful phenomena, or even so grave an accident as rupture of the bladder. If the pain is not unduly severe, and sensitiveness to pressure is not particularly manifest, operative treatment is useless. Such cases should be treated by medication of a calmative and narcotic character, by baths and balsams, and the intra-vesical instillation of a 1-to-50 or a 3-to-100 solution of nitrate of silver. Surgical means must be resorted to if the former are unsuccessful, and in severe cases they should be resorted to from the beginning. Tuberculosis is not a contra-indication, and the principle of intervention by operative means must be admitted in all rebellious cases of painful cystitis of whatever origin. As to the appropriate measure, dilatation of the neck may be resorted to, with drainage, in certain cases, and with success, but cystotomy is the better method—that is, colpo-cystotomy in the female, and perineal or hypogastric cystotomy in the male. The advantage of the hypogastric method is that it enables one to see and treat the vesical lesions. The treatment of the vesical mucous membrane may consist in the removal of vegetations, cauterization of ulcerations, curettement of tubercles, application of nitrate of silver, etc. If there should be a subsequent relapse, the author believes that it can usually be cured by quite simple treatment.

Extra-peritoneal Removal of the Uterus.—Frank ("Arch. f. Gyn.," xxx, 1) gives the record of sixteen cases in which the uterus has been enucleated by him from its peritoneal envelope. The indications have been uncontrollable uterine pruritus, retroflexion, metrorrhagia, prolapsus, carcinoma, and other neoplasms. Among his suggestions concerning after-treatment he mentions the use of a large nutrient enema immediately after the operation, which is thrown far into the intestine by means of a Nélaton catheter which is introduced as far as its end. This means of effecting nutrition is continued during subsequent days if the stomach does not functionate properly. Champagne and other wines are not much used by him, but he occasionally uses subcutaneous injections of camphor and ether. For drainage-tubes he uses specially prepared quills, on account of their thinness, smoothness, and incompressibility. They may be shaved down almost to the thinness of paper, and openings may be made in them of any number and size. Before being used they should be immersed for eight days in a 5-per-cent. solution of carbolic acid. The following objections have been made to this operation, and the author herewith offers his reply to them:

1. The operation is very difficult, and in performing it one will be very likely to tear the peritonæum. It is true that the operation is difficult unless one has seen it done or has practiced upon the cadaver, but this applies to many operations—for example, to the ordinary extirpation of the uterus by the vagina. In doing the author's operation one must be particularly careful to ascertain the position at which the peritonæum is reflected upon the body of the uterus. If the uterus is separated at the points of peritoneal reflection, the remainder of the operation will be easy, for the more the organ is dragged down the more is it under control. The finger or a sound should be in the uterine cavity sufficiently often for a guide. The work may be made easier by splitting the cervix in the middle line, and prolonging the incisions as the organ is dragged downward. As to the wounding of the peritonæum, a slight injury is not likely to do any harm, especially if the rent is closed at once.

2. How is it possible by this process of enucleation to effect complete control over hæmorrhage? As a matter of fact, the question of controlling hæmorrhage is not more troublesome than in the high operation for amputation of the cervix, for there is seldom any hæmorrhage from the body of the uterus in enucleation. During the operation, traction upon the organ tends to check bleeding, and after its removal the folds of peritonæum should be stitched together, being either inverted or replaced, according to circumstances, under which circumstance bleeding will also be prevented. Should it not be deemed advisable to stitch the peritonæum, a few ligatures passed in the region of the uterine end of the tubes will effectually close the torn branches of the spermatic arteries. Should there be troublesome oozing, which rarely occurs, it will be proper to apply a concentrated solution of the chloride of iron.

3. Removal of the uterus with the division of its peritoneal covering has the advantage that it enables one to remove the ovaries, which, if retained, might be the source of further trouble. This is admitted, but, on the other hand, their removal increases the difficulty of the operation, and the danger from sepsis and shock. The operation of enucleation is believed to be absolutely without danger, and especially useful in those cases in which the disease is limited to the uterus.

4. It is impossible to so enucleate the uterus that more or less muscular tissue shall not be left attached to the peritonæum. This means, in cases of carcinoma, the leaving of foci for the development of the disease. The enthusiasm for the total removal of the uterus for cancer has long since disappeared. It is only necessary to recall the arrangement of the lymphatic system of the uterus to realize that when once the lymph-vessels of the organ are involved the probability is great that the parametrium is already infected with carcinomatous elements, in which one is usually contented with energetic curetting. Schröder has also shown that recurrence after the supravaginal excision of the cervix is delayed longer than after extirpation. Enucleation is believed to be easier of performance than the high amputation, and also less dangerous. After the high amputation, septic infection of that portion of the uterine mucous membrane which is left often occurs, while if the body and fundus are enucleated the peritoneal folds quickly heal together, and the patient can safely leave her bed within twelve days. If any muscular tissue remains attached to the peritonæum after the uterus has been enucleated, it will be an easy matter to remove it, and then the inverted folds may be returned, with or without preliminary suturing. The operation is recommended less for cancer than for other diseases which are a source of permanent discomfort. It is recommended, only after other means of treatment have failed to bring relief, for those who are not likely to bear any more children, and especially for women of the working classes who depend upon their labor for their living.

The General Treatment of Puerperal Sepsis.—Runge (*ibid.*) refers to his paper published in 1886, in which he outlined a suitable method of treatment for septic cases among puerperal women, which should consist in the use of very large doses of alcohol, warm baths, nutritious food, and the avoidance of all antipyretic medicaments. Since that time he has treated nine cases of more or less severe puerperal sepsis by these means, and with only one fatal result. The opinions which were elicited by the paper in question were favorable to the avoidance and disuse of the so-called antipyretic medicaments; they were also favorable to the free use of alcohol, but they regarded the usefulness of the baths as at least questionable; indeed, some expressions were elicited which disapproved of them entirely as objectionable means. It was also doubted whether it would be possible, in the majority of cases, to administer a large quantity of nutrient material. The convictions of the author as to the value of the means which he has recommended have been deepened by additional experience. There are certain limits to the effectiveness of local treatment in puerperal sepsis. To be sure, one can prevent further resorption of poisonous germs by suitable precautions, but these do not defend the organism from the poison which has already been absorbed and is working in the circulation. The object of treatment should therefore be to furnish defense against the enemy which has already made its invasion, and, with this in view, the regulation of all the functions, especially those which pertain to digestion, is of first importance. The use of alcohol and warm baths will accomplish this end; the alcohol will increase the heart action and retard the metamorphosis of albuminoids, while the baths will increase the desire for food, and so prepare the way for the increased ingestion of nutrient material. By the same means the sensorium, circulation, and respiration will be benefited, and the author's experience enables him to say that these are facts and not theories. The treatment with alcohol should precede the use of the baths, in order to fortify the heart for their influence. The temperature of the baths should be 22° to 24° C., and they should be used from five to ten minutes, according to the strength of the patient. If there is a tendency to collapse after their use, a large dose of alcohol should be given, or a subcutaneous injection of ether or of camphor. The greatest care should be exercised in giving the baths so as not to weary the patient. They are not so much indicated on account of elevated temperature as for their influence upon the general condition—the activity of the heart, the respiration, and the appetite. They are not indicated in cases in which there is obstinate vomiting, nor where collapse is imminent, nor where thrombosis is associated with sepsis. The value of this method of treatment can be better appreciated if it is considered that sepsis means a struggle for the mastery between the cells of the tissues of the body and the microbes which have invaded them. The plan of treatment which the author has indicated has for its object the fortifying of the body to enable it to pass through this struggle successfully.

The Use of Corrosive Sublimate in Obstetric Practice.—Szabo (*ibid.*) says that the use of sublimate is approved of at the Buda-Pesth Obstetric Clinic, but the following conditions and restrictions have been found useful: 1. For the disinfection of the hands a solution of sublimate of 1 to 1,000 is recommended. 2. For the disinfection of the external genitals a sublimate solution of 1 to 2,000 should be employed. 3. For the disinfecting irrigation of the uterine cavity or the vagina a sublimate solution of 1 to 4,000 is recommended. 4. Irrigation of the vagina, and still more of the uterine cavity, is permissible only when the indication is very positive, either after parturition or during the puerperium. 5. Not more than two quarts of sublimate solution should be used for irrigation of the vagina or the uterine cavity. 6. In atonic hæmorrhages post partum a 1-to-8,000 sublimate solution should be used as a hæmostatic. 7. Sublimate should not be used with women who are suffering from anæmia, phthisis, nephritis, or diseases of the digestive organs.

Miscellany.

The Academy of Medicine's Committee's Report on the New York Quarantine.—The committee recently appointed by the New York Academy of Medicine, at the request of the Mayor, to examine into and report upon the condition of the New York Quarantine Station, consisting of Dr. C. R. Agnew, Dr. E. C. Janeway, Dr. Stephen Smith, Dr.

A. Jacobi, Dr. T. M. Prudden, Dr. H. M. Biggs, and Dr. R. H. Derby, has reported as follows:

"The first point reached in the exploration was Hoffman Island. It should be remembered that the Quarantine establishment, port of New York, consists of the landing station at Clifton, Staten Island, where vessels arriving receive the official inspection of the Health Officer; and two miles below this station, in the Lower Bay, two islands, artificially made of rip-rap and sand filling. The more northern of these islands, called Hoffman, is about two acres in extent; the more southern, near a mile distant from the former, is two acres and a half in size. Hoffman Island, in the system of Quarantine, is the place of detention. Off it detained vessels are anchored in the roadstead and exposed there to heavy seas when the wind is on the coast. To this island passengers and their baggage are taken from detained vessels by a small steam tug when, in the opinion of the Health Officer, their detention is made necessary by prevalence among them of infectious diseases, or when such diseases shall have existed on the ships in which they have arrived. The sick are sent immediately to Swinburne Island, to the hospital buildings which exist there.

"It is proper here to say that the Quarantine property, land, buildings, and plant generally owned by the State of New York, is in the custody of a body called the Commissioners of Quarantine, appointed by the State and responsible to it. The Health Officer of the port, appointed by the Governor of the State and confirmed by its Senate, has no other control of the property and stations than that of police. He may use it without addition or modification, and so far only as may be necessary to enable him to discharge his duties in preventing the introduction into the port of New York of contagious diseases or infectious substances. In regard to the question whether Quarantine property and affairs should be under the jurisdiction of a National Government rather than a State Government as now, the committee is not called upon to express an opinion. The committee deems its business to be to point out such defects of the Quarantine establishment as are plainly apparent and easily remedied; to advocate such improvements in the plant at Quarantine as would render it a sufficient safeguard for the port of New York and the country at large if administered in a scientific manner.

"As a related matter we would allude to the possible effect produced upon the business interests of New York and the country at large if cholera were permitted to invade the dense population of the city. It is estimated that $100,000 a day is received by those hotels in the city of New York from which people would flee if an alarm of cholera existed here. The amount of money received over the counters of shops from those who frequent the city to buy its innumerable wares can not be estimated. It is millions. Hundreds of millions are annually produced in values in our various factories. To disturb the peace and industrial interests of the city by permitting the irruption of cholera through defects in quarantine would inflict an injury upon business beyond computation. The time consumed in reaching San Francisco by railroad is about that of the possible maximum period of incubation of cholera. The germs of any of the contagious diseases admitted into the port of New York by inadequate quarantine might be conveyed to any portion of the United States, fructifying as they went. Every citizen of the United States and British provinces has therefore a personal interest in the condition of the New York Quarantine. The existence of cholera in New York would cause the entire country to quarantine against the city. In this way inter-State commerce would be paralyzed or seriously embarrassed. As regards the effect upon the health and death rate of the people we can not even surmise, as that question would turn upon the efficiency of sanitary police. The law of cholera, its propagation, limitation, and extinction are so well understood that the disease may be said without presumption to be subject to scientific prevention or control.

"With these few preliminary considerations your committee would now, in a cursory way, call attention to some of the manifest defects in the Quarantine establishment. In so doing they expect only to prepare the way for a thorough study of the subject. Thus steps may be taken to induce the Legislature, under appropriate law, to grant money enough to make Quarantine what it should be. The plans to do this should be speedily prepared by the State officers. If there is neglect in this matter, and cholera, which has threatened to invade our port for more than three years and has recently been brought to Quarantine, should appear in the spring, and, favored by warm weather, pass an imperfect quarantine and reach New York city or Brooklyn, or possibly extend beyond to near or remote places, public opinion would seek out the blameworthy and visit them with a condemnation which no seclusion would be deep enough to smother or mitigate.

"The ground on Hoffman Island is soft, uneven, full of recesses in which water, refuse, etc., will be retained without any chance of their being cleaned. The wood walls are in the worst possible condition, interrupted, broken, rotten. The rip-rap of only one half of the island is now supported by an inside wall of cement.

"The present buildings used for the residence of the people quarantined are hardly adapted for their purpose. They should be razed or remodeled.

"There is now hardly any adequate separation of ages, sexes, or families. No suspected groups can now be isolated. There is no opportunity at all to separate those who may be amply able and willing to pay. There is no proper accommodation, bedsteads, bedding, tables, forks, knives, spoons, plates, or towels. As an evidence of the hardships caused by want of means of isolation a steamer is at present detained at Quarantine, owing to the passengers and crew having been exposed to small-pox. They can not be taken to the island, as there is no subdivision of the hospital of observation.

"The supply of water is insufficient, and warm water is almost entirely wanting.

"For a population now there of more than 500 persons there are about four water-closets, each closet having three or four hoppers, some of which are not flushed at all, and all of which are old, badly constructed, and out of repair.

"The cleaning and disinfecting plant is entirely inadequate in extent and efficiency, thus making it impossible to cleanse the persons of the quarantined, or disinfect their luggage either expeditiously or thoroughly.

"The 'sulphur-room' should not be where it is and as it is; for, being on the main floor of a building occupied by masses of the quarantined, the latter are constantly exposed to fresh infection from clothing brought in to be disinfected and to the fumes of the sulphurous acid when the door of the sulphur-room is opened.

"The island must be protected against the inroads of the sea. This may be done as may seem best to the State Engineer:

"*First.* The rip-rap wall extending around the island should be made smooth and even to the water's edge.

"*Second.* The concrete wall, extending at present only part way around the island and inside the rip-rap, should be completed.

"*Third.* A solid wall of masonry, with smooth surface and steeply sloping, should be laid on the face of rough stones, either on the line of or within the existing rip-rap.

"*Fourth.* A low wall might be built within the rip-rap, capped with stone or granite curbing, on which a broad walk should be constructed around the island.

"An iron fence on the outer edge of the wall should extend entirely around the island, in order, first, to separate the occupants of the island from the rip-rap, and, second, to prevent access of strangers to the island.

"The surface of the island should be cemented or asphalted, and should be raised sufficiently above the exterior wall to allow of good drainage. It should be smooth and hard to allow of thorough cleansing and prevent the lodgment of filth or germs.

"The docks should be reconstructed, and two in number; the floorings made non-absorbent with concrete or asphalt. One should be for general use, and the other exclusively for the disinfecting plant. A covered landing-stage should be constructed on the former, from which the sick in stretchers could be transferred to boats. A covered way should be provided from this dock to the large buildings and hospital. It would be well to have a hand-car, rails to be laid from the dock to the buildings.

"The surface of the island outside the buildings should be divided by a wall or iron fence into two distinct portions:

"A.—The part adjacent to the boat-landing should be used for disembarking, disinfection, etc., and on this should be placed the cook-room and dormitory for employees, and all other administrative appurtenances.

"B.—The remainder of the island should be divided by walls into approximately equal areas, corresponding to the groups of people, each with a water front, and each one of these areas should be in communication with only one of the sets of apartments occupied by the separate groups of people.

"It would be advisable to separate each of these yards from the water-front by an open iron fence so as to leave a walk of about ten feet in breadth around the island exclusive of the administration area. There should be on the outer or sea side of this wall another iron fence around the entire island.

"The present administration building, if retained, and one of the largest buildings must be remodeled to answer for a new administration building, a disinfecting building, and a store-house.

"If the present large buildings are to remain, the roof should be repaired; each main floor should be subdivided into two or more portions by solid partitions, to allow the grouping of the inmates according to age, sex, and relationship; each apartment should have a separate entrance and be thoroughly ventilated. This method should be condemned, however, unless absolutely unavoidable, as poorly ventilated apartments would result. The best plan, and, in the opinion of the committee, the only sanitary one, would be to construct new fire- and filth-proof buildings, tearing down the old ones as speedily as possible; or, if need be, one at a time.

"The present administration building should either be remodeled or a new one erected. It should contain the medical officer's apartment (who should also be Superintendent) and quarters for an engineer, and with private kitchen; also an extension in one of the docks, with a furnace suitable for burning actually infected articles brought in by passengers, kitchen refuse, etc.

"Separated from these apartments there should be a large kitchen with accommodations for cooking meals for 800 or 1,000 persons; rooms for the attendants; boiler-room, containing at least two boilers for adequate power and security in case of accident to one; engine, pumps, and apparatus for electric lighting. The sleeping and living rooms for the employees, with three rooms for the resident physician, may be placed in a separate building.

"There should be a small isolated building, easy of access to the dock, where persons taken suddenly ill could be at once placed prior to their removal to Swinburne Island. It should contain at least four rooms, to admit of the separation of the sexes and of diseases.

"The main buildings should be on the pavilion plan, of brick and iron, with two stories. Each should have a central hall, from which wings should radiate at right angles. These wings should constitute rooms capable of giving 500 cubic feet of air to each adult or every two children, and of a size to accommodate 25 persons, with an extreme capacity of 40 or 50.

"A separate set of rooms should be provided for cabin passengers and those who could pay for better accommodations. . . .

"The disinfecting plant should be situated in a separate building near the water's edge. The plant should consist of two or more large iron chambers lined with steam pipes connected with a superheater, so that a dry temperature of at least 220° could be easily obtained. It should be arranged so that moist steam under 15 or 20 pounds pressure could be introduced. The room in which the chambers are placed should be divided by a non-absorbent partition, and the materials to be disinfected should be separated at one end and removed from the other, this handling to be done by separate people. . . .

"It would be wise to fill up the present cisterns and construct new ones. . . . It would be well to provide for an emergency by having a large reservoir to which water could be brought in case of emergency. Water for drinking and cooking might be brought by boat from Croton supply. . . .

"His Honor the Mayor wishes the committee to estimate the amount which will be required to be appropriated by the State in order to complete the necessary arrangements. . . . To comply fully with the request, the committee would say that a commission should be formed, to consist of the State Engineer, the Superintendent of Public Works, the Mayor of the City of New York, the Mayor of Brooklyn, a representative from the New York Board of Health, the Health Officer of the Port, and the Commissioners of Quarantine."

An Ambulance Service for the National Guard of the State of New York.—General Orders No. 36, issued from the Adjutant-General's office, December 22, 1887, read as follows:

I. Commanding officers of regiments and battalions, and of batteries and separate companies having a medical officer, will organize ambulance corps in their respective commands as follows: For a regiment or battalion the corps shall consist of the medical officers of the command, the hospital steward, and three enlisted men from each company of seventy-five men, and two enlisted men from each company of less than that number. For a battery or separate company the corps shall consist of the medical officer and four enlisted men. The enlisted men shall be detailed by the commanding officers upon the recommendation of their senior medical officers, and there may be included in the detail for a regiment or battalion two corporals, and for a battery or separate company one corporal, but no other non-commissioned officers. When the exigencies of the occasion require, commanding officers will detail such enlisted men as have already been found proficient, and may also detail musicians for duty with the corps. Men detailed for ambulance service shall be relieved from such duty on the application of the medical officer having charge of the corps to which they are attached.

II. The corps shall be under the immediate orders, control, and instruction of the senior medical officer of the command to which it belongs, but no assignment or detail for duty with the corps shall relieve an officer or enlisted man from his regular duties, except when on duty with the corps in active service.

III. To prepare the members of the corps for their duties, the medical officer in charge will provide a course of instruction. This course shall commence in the first week in January of each year and continue during the drill seasons of the year, and shall be open also to such other members of the command of which the corps is a part as may be approved by its senior medical officer. The dates, hours, and places when and where the instruction will be given shall be published in orders to the whole command by its commanding officer.

IV. The course of instruction, given by the medical officers of the command, shall include, for the present: Rudimentary instruction in anatomy and physiology. Rudimentary instruction in the diagnosis of the common accidents and diseased conditions to which national guardsmen are exposed, and the common means for the prevention of the same. Instruction as to the common means employed for the urgent relief of the sick and the injured, including stretcher drill and matters pertaining to transportation of the sick and injured. Instruction in individual and camp hygiene.

V. At the close of the course of instruction the detailed men of the corps shall be examined as to their proficiency by a board to be appointed for that purpose, as hereinafter provided. The senior medical officer of each regiment, battalion, battery, and separate company shall keep a record of the name, proficiency, and general standing of each member of the ambulance corps under his charge from the time of the first attendance of the member to the termination of his course of instruction, and also the result of his examination.

VI. Commanding officers of brigades will, with the approval of the Surgeon-General, appoint for their respective commands boards of examination, which shall consist of not less than three medical officers, whose duty it shall be to examine and report to the brigade commander as to the proficiency of the detailed men who have attended the prescribed course of instruction. These men will be ordered before the examining board on the application of the commanding officers of the regiment, battalion, battery, or separate company to which they belong.

VII. Enlisted men of ambulance corps, when actually on duty as such, are authorized to wear, in addition to insignia of military grade, around the left arm above the elbow, an arm badge (brassard) "of white cloth, sixteen inches long and three wide, with a cross of red cloth two inches high and two inches wide in the center."

VIII. An enilsted man who has passed the prescribed examination satisfactorily, and has the approval of the commanding officer of the brigade to which he belongs, will be permitted to wear at all times a badge of a pattern to be prescribed in further orders, distinctive of the ambulance corps of this State, as an indication of a special fitness to aid the sick and injured under urgent circumstances.

IX. Details for instruction in the duties of an ambulance corps will be made annually, at such time as will permit the course of instruction of each succeeding class to begin promptly in the first week in January.

X. There shall be allowed and issued by the Chief of Ordnance, as Acting Quartermaster-General, State arsenal, corner of Thirty-fifth Street and Seventh Avenue, New York city, upon requisition made direct to him by the respective commanding officers, stretchers of a pattern approved by the Surgeon-General, at the rate of two for each regiment and battalion, and one for each battery or separate company having a medical officer.

A Congress for the Study of Human and Animal Tuberculosis.—A congress of physicians and veterinarians for the purpose of the scientific study of tuberculosis in man and in animals will be held in Paris from the 25th to the 31st of July, 1888, in the halls of the Faculty of Medicine. The congress is organized by a committee consisting of Professor Chauveau, president; Professor Villemin, vice-president; M. Butel, a veterinarian of Meaux; M. Leblanc, of the Academy of Medicine; M. Nocart, of Alfort; M. Rossignol, a veterinarian of Melun; M. Cornil, M. Grancher, M. Lannelongue, and M. Verneuil, of Paris; and M. L.-H. Petit, secretary-general.

The questions to be discussed will be of two sorts: Those proposed in advance by the committee of organization, and others chosen publicly, but all relating alike to tuberculosis. One day will be devoted to anatomical demonstrations in M. Cornil's laboratory. Another day will be devoted to examinations and autopsies of tuberculous animals at the School at Alfort. All French and foreign physicians and veterinarians may, by subscribing early enough and by paying a fee of ten francs, become members of the congress and take part in its proceedings. The subscription entitles the member to a volume of the "Proceedings" of the congress. The sessions of the congress will be public. All the communications and discussions will be in French. More complete details concerning the rules and government of the congress will be published hereafter.

The following questions are proposed by the committee of organization: 1. On the dangers incident to the use of the meat and milk of tuberculous animals, and the means of preventing them. 2. On the races of man, species of animals, and organic media in relation to their susceptibility to tuberculosis. 3. The avenues of introduction and propagation of the tuberculous virus in the economy; prophylactic measures. 4. On the early diagnosis of tuberculosis in man and in animals. Although the members of the congress will be left free to choose a certain number of questions in addition to the preceding, which will be accorded priority in the order of business, the committee of organization desires to call attention more particularly to the following: The heredity of tuberculosis in man and in various species of animals. Its contagiousness from man to man, among animals, and from animals to man, and *vice versa*. The various forms of evolution of experimental tuberculosis according to the quality and the quantity of the virus inoculated. The differences of tubercular affections in various species of animals. The means of distinguishing the lesions caused by Koch's bacillus from the granulations and inflammations due to various microbes (zooglææ, the bacteria of the contagious pneumonia of the hog, aspergilli, etc.), and to animal parasites or foreign bodies. On tubercular lesions complicated with other microbian lesions. The mode of formation of giant cells and tubercular islets. The evolution of local tuberculoses. On agents destructive to Koch's bacilli. Local and general measures capable of arresting the spread of experimental tuberculosis. The value of surgical treatment in tubercular affections.

Subscriptions should be addressed to M. G. Masson, treasurer, 120 Boulevard St.-Germain, Paris, and all communications relative to the scientific work of the congress to Dr. Petit, secretary-general, 11 rue Monge.

New York Academy of Medicine.—At the next meeting of the Section in Surgery, Monday evening, January 9th, Dr. Dixon Jones will present an "Apparatus for Sterilizing Dressings by Heat," Dr. J. H. Girdner will read a paper "On the Localization of Bullets, etc., by Electricity," and Dr. W. W. Keen, of Philadelphia, will read a paper "On Some Points in Wound Treatment."

At the next meeting of the Section in Neurology, Friday evening, January 13th, Dr. C. L. Dana will read a paper on "The Urine in Functional Nervous Diseases," and Dr. Grace Peckham will read a paper on "The Uterine Neuroses in their Diagnostic and Therapeutic Aspects."

At the next meeting of the Section in Ophthalmology and Otology, Monday evening, January 16th, Dr. J. L. Corning will read a paper on "Faradization of the Ocular Muscles," Dr. David Webster will read a paper on "Chorioidal Sarcoma with Invasion of the Optic Nerve," and Dr. H. Knapp will read a paper on the "Removal of an Orbital Exostosis."

At the next meeting of the Section in Theory and Practice of Medicine, Tuesday evening, January 17th, Dr. S. De Jager will read a paper entitled "Objections to Williams's Pneumatic Cabinet."

The first order of business at each of these meetings of sections is announced as the nomination and election of officers.

University of Pennsylvania, Department of Medicine.—It is reported that Dr. R. A. F. Penrose, who for many years has occupied the chair of obstetrics and diseases of women and children, has tendered his resignation, to take effect May 1, 1888. Dr. Penrose was appointed in 1863 to succeed Dr. Hugh L. Hodge, and stands fourth on the list of professors in the order of seniority.

The Health of the State of New York.—According to the State Board of Health's "Monthly Bulletin," for November, 1887, the whole number of deaths reported for the month was 7,292, including 1,421 from zymotic diseases.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending December 30th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending December 10th corresponded to an annual rate of 21·1 in a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Plymouth, viz., 15·6, and the highest in Newcastle-on-Tyne, viz., 33·2 in a thousand. Small-pox caused 17 deaths in Sheffield, 2 in Bristol, and 1 in Hull.

London.—One thousand five hundred and seventy-four deaths were registered during the week ending December 10th, including 32 from measles, 39 from scarlet fever, 27 from diphtheria, 70 from whooping-cough, 30 from enteric fever, and 12 from diarrhœa and dysentery. There were 408 deaths from diseases of the respiratory organs. Different forms of violence caused 49 deaths, and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 19·5 in a thousand. In greater London 1,996 deaths were registered, corresponding to an annual rate of 19·2 in a thousand of the population. In the "outer ring" 6 deaths from diphtheria, 8 from measles, 7 from "fever," and 25 from whooping-cough were registered.

Ireland.—The average annual death rate represented by the deaths registered during the week ending December 10th in the sixteen principal town districts of Ireland was 28·8 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 4·8, and the highest in Dublin, viz., 34·4 in a thousand.

Dublin.—Two hundred and forty-one deaths were registered during the week ending December 10th, including 6 from measles, 3 from whooping-cough, 15 from scarlet fever, 3 from enteric fever, 1 from diarrhœa, and 2 from dysentery. Diseases of the respiratory organs caused 67 deaths. Two accidental deaths were registered, and in 37 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 34·4 in a thousand.

Scotland.—The deaths registered in eight principal towns during the week ending December 10th corresponded to an annual rate of 22·7 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 16·5, and the highest in Paisley, viz., 32·5 in a thousand. The aggregate number of deaths registered from all causes was 567, including 14 from measles, 14 from scarlet fever, 4 from diphtheria, 29 from whooping-cough, 5 from fever, and 13 from diarrhœa.

Germany.—The deaths registered in fifty-three cities of Germany, having an aggregate population of 6,831,222, during the week ending November 26th corresponded to an annual rate of 26·4 in a thousand. The lowest rate was recorded in Rostock, viz., 7·8, and the highest in Dantzic, viz., 30·7.

Netherlands.—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,102,200, corresponded to an annual rate of 18·7 in a thousand of the population. The lowest rate was recorded in Arnheim, viz., 15, and the highest in Rotterdam, viz., 21·1.

Florence.—The United States consul, in his dispatch dated December 2, 1887, confirms his telegram of the same date, as follows: "'Agent at Cagliari reports cholera at Terralba, Sardinia.' The consular agent further reports that 'on the part of the authorities the fact is kept as quiet as possible, but I have received reliable information that the news is unfortunately true.' A newspaper accompanying the above, published at Cagliari, dated the 28th November, 1887, reports 13 cases and 12 deaths from cholera at Terralba from the 16th to the 27th November, inclusive."

Lima, Peru.—The United States *charge d'affaires ad interim*, under date of December 3, 1887, incloses a copy of a newspaper clipping stating that "a police medical officer lately commissioned by the supreme government to report the increase of cholera in Chili sent on the 29th ultimo the following cablegram to the foreign office: 'Santiago, 70 cases; Talca, 1; Chillan, 16; Valparaiso, 6 sick in lazaretto, buried 19.'" Another clipping states that the ministry, in consideration of the fact that cholera has made its appearance in Chilian ports, and that rigorous quarantine can not yet be established on account of the lazaretto ordered to be constructed for said purpose not being finished, have ordered the ports closed to all shipping proceeding from the ports of the Chilian Republic, and those that may have touched in them, with the exception of Punta Arenas (Sandy Point).

Havana.—The sanitary inspector reports for the week ending December 17, 1887, 2 deaths from yellow fever and 89 from small-pox.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	December 10.	2.260,045	904	..	....	5	....	49	8	29
Warsaw	December 3.	439,174	193	..	....	9	....	....	6	2
Calcutta	November 12	433,219	235	7	....	....	....	....	....	....
Amsterdam	December 10.	378,686	148	..	....	....	1	1	....	1
Munich	November 26.	269,000	127	..	...	....	....	1	2	1
Edinburgh	December 10.	258,000	106	..	....	....	....	1	....	1
Palermo	December 11.	250,000	116	..	....	....	1	....	1	5
Belfast	December 3.	224,422	155	..	....	...	....	5	5	1
Genoa	December 10.	179,526	100	.	....	13	...	....	1	7
Leipsic	December 10.	170,000	56	.	....	....	...	....	1	8
Trieste	December 3.	150,157	80	..	....	18	....	....	3	2
Toronto	December 17.	130,000	27	..	....	....	....	....	....	4
Stuttgart	December 10.	125,510	35	..	....	....	....	....	....	3
Bremen	December 3.	119,000	34	..	....	....	....	....	1	....
Havre	December 10.	112,074	57	..	....	1	....	6	1	....
Pernambuco	November 29.	110,000	.....	..	....	....	....	1	....	....
Reims	December 10.	97,903	43	..	....	1	....	....	....	4
Leghorn	December 11.	94,423	41	..	..	....	....	1	1	....
Maracaibo	November 12.	40,000	15		2	....	1	....	....	....
Maracaibo	November 19.	40,000	16	..	1	....	....	1	....	....
Maracaibo	November 26.	40,000	14	..	1	....	1	....	....	....
Maracaibo	December 3.	40,000	15	..	2	....	....	....	....	....
Cienfuegos	December 5.	35,464	17	..	2	6	....	....	....	....
Cienfuegos	December 12.	35,464	23	..	1	9	....	...	....	....
Callao	December 3.	34,000	......	..	....	....	....	1	....	....
Guayaquil	December 1.	30,000	54	..	1	16	....	....	....	....
Guayaquil	December 8.	30,000	58	..	....	15	....	....	....	....
Gibraltar	December 4.	23,631	4	..	...	....	....	1	....	....

ANSWERS TO CORRESPONDENTS.

No. 118.—This correspondent asks what proportion the fee of a consultant should bear to what his fee would have been had he been the regular attendant; also whether the attending physician is responsible for the consultant's fee and should collect it. We are not aware that practitioners generally fix their consultation fees on the basis of any definite proportion to their ordinary fees, but we presume that usually the proportion is about as three to one. We do not consider the attending physician responsible for the consultant's fees, unless the latter's services were rendered at the request of the attendant and without the concurrence of the patient; the practice is common, however, for a consultant, provided he was chosen by the attendant, to send his bill to the latter, but merely for transmission to the patient. It is considered the courteous way of proceeding, and is not intended to imply that the attending physician is in any degree responsible.

No. 119.—The meetings are open to the profession.

No. 120.—The book referred to was Smollett's "Adventures of an Atom."

No. 121.—As used by writers in the English language, the word adduction means not only the drawing of a part toward the median line of the body, but also, as in the case of the fingers and toes, a drawing toward the median line of a limb.

No. 122.—An important point in securing neat serrations with a roller bandage is to discontinue the tension each time a reverse is made, the part of the bandage last applied being held temporarily with the finger.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

ADDRESS AT THE INAUGURATION OF THE SLOANE MATERNITY HOSPITAL AND OF THE VANDERBILT CLINIC,

DECEMBER 29, 1887.

By PROFESSOR T. GAILLARD THOMAS, M. D.

"*Vita brevis ; ars longa.*" Man's life is but a span; the life of Art is long and endures for ever. Generation after generation is cut down and disappears like the herb of the field; but Art, with grand and measured tread, marches onward through the ages!

As we meet here to-day to foster the interests of the noblest of the arts, so met the men and women of ancient Greece and Rome. Since then they and thousands who have succeeded them have vanished like a tale that is told; but the art which they fostered lives now, as it lived then, coming down to us in lusty strength, in youthful vigor, in enduring glory.

What is life for us to-day more than it was for those a thousand years preceding us? Have we found an antidote for its cares, a safeguard against its sorrows; a preventive of its brevity, its hollowness, or its weird and sad termination? What is art to-day contrasted with art as long ago? From an atom it has grown into a mountain. The story of its growth oversteps the limits even of imagination. He who a century ago would have given credence to the fairy-tale of the princess whose lover was aided in his search for her by three mysterious men, the first capable of traveling five hundred leagues in a day, the second of seeing thousands of miles, and the third of whispering through that distance into the ear of the person seen, would have been regarded as a madman. And yet to-day every one of these apparently vain imaginings has been verified. Within a few seconds the news from far-off lands is written or whispered to us; within a day thousands of miles are traversed with ease and certainty; and the patient student from hour to hour watches the heaping up upon the face of the moon of piles of scoriæ by volcanic action, and measures the depths of the valleys which they create. A century ago steam and electricity were unknown; now they are man's willing slaves, destined to do his bidding, as the ancients foreshadowed when they represented the thunderbolt in the hand of Jupiter. What imagination so vivid as to foreshadow the discoveries of the next century? What prophet so gifted or so bold as to foretell the triumphs of art as yet undreamed of and lying dormant in the womb of time?

Among the arts none has more essentially changed with time than has that whose votaries are assembled in this beautiful hall to-day; none is more rapidly changing now; and in the advance and perfection of none is society more deeply interested; for truly has it been said:

"A good physician skilled our wounds to heal
Is more than armies to the public weal."

Medicine as an art has existed since the days of Hippocrates, who lived four hundred years before Christ. During the two thousand two hundred years which have since elapsed little was done for its material and decided advancement until the beginning of the seventeenth century. For these more than two thousand years the art lived, but lived in intimate communion with superstition and the most unqualified charlatanism; lived in the musty tomes of priests and shavelings; lived in the brains of dreamers and theorists; lived in the hands of the herbalist and the barber. But still it lived, and in the early part of the seventeenth century it was stirred into renewed vigor by three influences which proved potent for good. Since that time amends have been made for prolonged torpor by a rapidity of progress which must meet the demands of the most exacting critic, and during the last half century it may with justice and without boastfulness be claimed that no other science or art has left it behind in the race for advancement.

I just now pointed out the influence which those two gigantic factors, steam and electricity, had exerted upon the arts in general. Early in the seventeenth century medicine felt a propulsive influence, no less decided, from the establishment of inductive philosophy by Francis Bacon, of the perfection and utilization of the microscope, and of the discovery of the circulation of the blood by the great Englishman, William Harvey. Archimedes once declared that if he were only given a standpoint for his lever he could move the world. These three contributions furnished a tripod for the support of a lever which at once moved medicine upward and onward.

And here, before I proceed further, let me meet the criticism which I feel sure that some of my non-professional hearers will launch at me, that the claim which I have ventured to make for medicine savors of boastfulness. I here boldly and without hesitation declare the belief that vaccination and the discovery of anæsthesia surpass in the beneficence of their results even steam and electricity. And as this is true as to these major factors, so do I claim that it is so as to many minor ones. Let me in all sincerity and truth ask you to-day these questions: Which would you prefer to give up—steam, with all its manifold advantages, all its blessings, all its influences upon civilization; or to return to the times when that loathsome disease, small-pox, would strike a community and pass over it like a simoon, killing hundreds by a terrible death and deforming thousands for life; to the time when a household would be stricken down, demoralized, and desolated; and when beauty was transformed into hideousness within a few days? Would you rather give up the charming results of that magical power electricity, with its grand achievements and its luxurious outcome; or return to the dark days when your loved ones, exposed of necessity to the surgeon's knife, would have to suffer mortal agony for hour piled on hour; when she who is dearer to you than life itself had to bear the agonies of the primal curse in the same degree as our mother Eve; and when you yourself, when dying a slow death of suffering, would be deprived of the sweet boon of euthanasia? I do not pause for a reply. I know that every one of you, every man in all his selfishness, every woman in all her disinterestedness of love, will say with me, "Perish steam, perish electricity, rather than that we should go back to those dark and gloomy days of human woe and human helplessness."

If a dividing-line can anywhere be drawn between modern and ancient medicine, between medicine as a pure art and medicine as an art guided by the beneficent light of science, it would fall about the middle or latter part of the sixteenth century; and there can be no doubt as to the influence of the three great discoveries which I have mentioned in bringing about the grand result. From this time rapidly appeared upon the stage of medical labor those great students of the past who left upon its literature an impress as profound as that which was left upon general literature by Chaucer, Shakespeare, and Milton; I allude to Vesalius, Paré, and Sydenham, and later to Boerhaave, von Haller, Morgagni, Jenner, and the Hunters. These men labored at much greater advantage than did their predecessors, for their minds were prepared for proper methods of study by the establishment of inductive philosophy; their scope was greatly increased by the understanding of the circulation of the blood, and their eyes were given miraculous powers by the perfection of the microscope. Nevertheless, during the seventeenth and eighteenth centuries the art and science of medicine stumbled painfully and slowly onward, hampered by man's vain tendency to theorizing, constructing formulæ, and establishing artificial systems. Every great man felt that he must prove his right to being so considered by propounding and sustaining some dogma. What an investigator thought out in his closet, that he saw at the bedside, and that he strove to maintain, not by demonstration to the senses, but by words, by sonorous phrases, by eloquent sentences, and by astute and long-drawn argument. Read to-day the writings of one of the most charming of medical writers, the Thomas Watson of the olden time, Sydenham. You will find them teeming with seductive argument, eloquent appeal, powerful rhetoric; but equally will you be struck by want of evidence, absence of appeal to the senses, and failure of physical demonstration; abundant and pithy calls upon the intellect you will find, but none upon the sight, the touch, the hearing, and the smell. Does he advance the theory that carbuncle is a low grade of inflammation excited by the introduction into the blood of some external malign influence? If so, it is merely his own opinion; nothing more. He does not show you with the microscope the anthrax bacillus. Does he allege an altered renal action in general dropsy? If so, he fails to coagulate albumin in the test-tube, or show you tube-casts and epithelium. Does he maintain that the air-vesicles of the lungs are filled with plastic material during the first stage of pneumonia? If he does so, he lacks the power of making you hear the crepitant râle as a conclusive proof of his correctness.

As the pestilence which they sought to circumvent was said to walk "by darkness," so walked their finely drawn and carefully woven theories; and, alas, too often walked they hand-in-hand with the evil against which they were launched. During that period of mysticism, of doubt, and of theory our calling should in all honesty have pleaded guilty to the scathing definition of a physician as "a man who poured drugs of which he knew little into bodies of which he knew less."

And so things went on with medicine, not from bad to worse, for it would have been hard to find the latter, but from bad to a very little better, and thus they continued to go until the propitious dawn of the nineteenth century, which was heralded by the discovery of vaccination by the immortal Jenner. As the century advanced into its latter half our art had done enough to warrant it in laying claim to the title of "Demonstrative Medicine," in contra-distinction to that of the olden time, which might have been called "Theoretical Medicine." Men, educated by the influences which I have cited and by others of a similar nature, now began to make all supposition, all belief, all theory subordinate to physical proof, to demonstration to the senses. They began to study, not isolated in their closets, but banded together in hospitals, in laboratories, and in clinical rooms. There no man ventured to advance a view the truth of which he could not maintain by evidence. Diseases of the lungs and heart were listened to, not talked about; those of the deep structures of the eye were looked at with the ophthalmoscope; the darkness of the larynx was dissipated by the laryngoscope; all canals were tunneled for the admission of light by specula; and medical chemistry or the microscope would pronounce dogmatically as to the nature of fluids and solids removed from any part of the system.

All the nations of the earth soon began to vie with each other in the advancement of medicine, free of mysticism and theory, and capable of proof and of demonstration. In Germany, in France, in England, in Russia, and in Italy laboratories, hospitals, and cliniques soon teemed with students eager to learn what the new era could teach, and with devoted investigators equally eager to make discoveries and to impart them. And what is so far the outcome? It is so immense, so grand, so vast that the time allotted to this address is insufficient for even a rapid presentation of it. Let me cite a few facts only. The discovery of that blood-poisoning called septicæmia, and of the methods of avoiding it, by Lister, of Scotland, have robbed hospital operations of nine tenths of their terror, have already saved thousands and thousands of lives, and are destined in the future to give to man incalculable results.

Should the noble efforts of the great Pasteur succeed in accomplishing the prevention of hydrophobia, that success would be entirely due to it; should they fail, what of it? He has "struck a lead," as miners express it in mining, which, whether he live or die, whether he survive or perish, whether he succeed or fail, will be followed up by others to grand results.

A few years, a very few years ago, the lying-in or maternity hospitals of the world were transformed into charnel houses by that terror of all lands—puerperal fever. Now, in the most insalubrious parts of Paris, of Vienna, and of St. Petersburg, there is scarcely a mortality of three in a hundred from this cause where proper precautions are observed.

To the non-professional members of my audience all this, so wonderful is it, may appear as the tale of a romancer, or the exaggeration of an enthusiast. But it is neither. I have merely touched upon the theme; by no means have I done it justice.

And it requires no prophet's power to declare that scientific medicine is in our day in its early, puling infancy. What has been done is as nothing to what will be done. What we know falls into insignificance when compared with what we shall, what we must know, within the next century.

And what has accomplished all that has thus far been effected in the way of advancement? The great, the leading factor has been a change in our methods of study, an improvement in our plans of investigation, a more philosophical style of collating our facts and drawing our deductions. The laboratory work, the clinical study, and the use of instruments of precision, to which special reference has been made, have all been merely means for developing the experimental and demonstrative methods of study which have resulted in the new era which is now fully dawning upon us in all its abundance of results.

If in this great work the monarchical countries of Europe have outstripped our own land, it is because of the endowment of institutions of learning, the aid given to struggling science, the fostering hand stretched out to art by such forms of government on the one hand, and the well-known neglect of these things by republics on the other. Ever since the foundation of our country our medical colleges have struggled onward as private enterprises dependent for existence upon the fees of those to whom their diplomas were granted, unaided by government, unthought of by society, unendowed by men of wealth, whose millions at their deaths went to the support of some distant enterprise, the erection of some monument or statue, or some similar work of great though of far less importance. All honor to the house of Vanderbilt, which has created a new era, set an example which is even now being nobly followed, and engraved its memory upon the heart of every true physician of our country.

We are engaged to-day in inaugurating a clinic and lying-in hospital, both put at the disposal of our art by Vanderbilt's immediate descendants, desirous to emulate his glorious example, and eager to lay medicine under a greater debt than the great one which it already owed to its head.

"The Vanderbilt Clinic!" Did the origin of the word "clinic" ever strike you? It is derived from the Greek "κλίνη," a "couch," and its full signification is this: "In these halls the art of medicine is to be studied at the bedside. The mind of the student is not to be filled with the thoughts, the dicta, the suppositions, and the deductions of other men, but here he is to study disease in its ghastly truth for himself, by the aid of sight, touch, hearing, and smell, and to draw conclusions for himself. Here he is to seek the truth, and to learn from his teachers how to find it; not to accept as truth what those teachers believe to be such, not to strive to learn from their experience, but to collate facts and acquire experience for himself."

This is to be one great outcome of this clinic. But equally important results remain to be told, even without alluding to the self-evident one of the great blessing which will accrue to the poor of New York, who will profit by the immediate effect of the medical service now placed at their disposal.

And now I come to tell you of a singular coincidence in this exhibition of generosity and charity, which is not generally known, and of which I would make history did the power lie within me. Before the thought of the great gift made by Vanderbilt had entered into his charitable mind, one of the members of the Faculty of the College of Physicians and Surgeons, under the authority of a son-in-law of Mr. Vanderbilt, was searching for a location for a maternity hospital to be erected and equipped entirely at his personal expense. To-day the Sloane Maternity Hospital is in full working order, and with the Vanderbilt Clinic is put at the disposal of the college so richly endowed by the head of the house.

Even this is not all. The wife of this generous man, a true daughter of her house, apparently unwilling to be outdone in good works even by her own husband, has assumed in perpetuity the entire expenditure attendant upon the working of this magnificent charity.

What grand rivalry! What princely extravagance! What God-given inspiration!

Yet great as is this munificent offering to humanity and to science, greater, far greater, is the reward which, even in their life-time, must be meted out to these generous donors. This house of refuge and of mercy, built with all the cunning of the architecture of our day, will stand for centuries. What monarch's wealth could purchase a sweeter thought, a more sublime reflection, than that throughout that time the prayers of thousands of weary, sad-faced women, of thousands of grimy sons of toil, will constantly ascend for their benefactors in gentle murmurs to the judgment-seat of God?

"The prayer of the righteous man availeth much," but rather give to me the supplications in my behalf of the suffering, the friendless, and the poor to whom it has been vouchsafed me to have offered aid and comfort.

A favorite dictum of theologians of the olden time was this: "The blood of the martyrs is the seed of the church." So deeds, such as that of which I have just made grateful mention, are the seed of science. From the seed thus sown will spring up results throughout our broad land, from Maine to Texas, which will multiply an hundred-fold the generous act which we here acknowledge. He is short-sighted indeed who sees in the gift which we receive to-day a benefit to one institution or to one city. A noble example has been set, a fruitful hint been given which will redound to the advantage of science and humanity throughout our wide borders from the Atlantic to the Pacific shores.

Trustees and Faculty of the College of Physicians and Surgeons who are to-day made custodians of this princely gift, a weighty responsibility rests upon us so to administer it as to develop to its fullest extent the intentions of the givers. It is clear that their desire has been to elevate the standard of medical education in our country, to advance the science of medicine, and thus to benefit society and humanity. Let no narrow policy, no views bounded by local interests, no ambitions less lofty than those to which allusion has just been made, enter our minds. But with a high and firm resolve let us strive, in the general cause of science and humanity, so to acquit ourselves of our stewardship that those who sit in judgment upon us after our mortal frames shall have become dust may pronounce upon each of our memories that verdict, so much to be desired, "Well done, thou good and faithful servant!"

The thought which entered the minds of the creators of this clinic—that in endowing the quiet, unobtrusive, and unobserved science of medicine they could benefit humanity, elevate art, and rear to their names an unostentatious yet pleasant memorial in these halls, "where charity and science so nobly meet"—was an original, a happy, a noble one. Whence came it? Not from a desire for fame. Half the gift elsewhere bestowed would have brought them more. Not for the advancement of worldly interests. What worldling craves the affectionate admiration of a guild like ours? It had its birth in some nobler, loftier, purer sphere.

History gives abundant evidence of man's desire to live in the memory of those whom he leaves in this life after he has crossed the dark and silent river; of his aversion to the chilling thought of being completely obliterated and fading from the minds of men like the baseless fabric of a vision, leaving not a rack behind. And history has taught us that it is not the column of brass or the statue of stone which best preserves the name intrusted to it. To live after death our monument must be erected in the grateful hearts of those who succeed us. When the arch of Severus shall have made dust for the streets of Rome, the simple prayer of the good Chrysostom, contained in ten short lines, will cause his memory to live for ages in the minds of men! Lorenzo de Medicis left his memory to the keeping of art—of art honored, elevated, and purified by him; his name shines more brightly to-day than it did even in his own time. *Ars longa; vita brevis.*

In whatsoever garb it may appear, there is a charm, a beauty about the God-like virtue charity which commands for it admiration, sympathy, and respect. How various are its manifestations! Here we behold the miser indulging in it as a posthumous duty because he can not carry his riches with him into the hereafter; bequeathing his cherished millions to the poor because "there is no pocket to a shroud"; here the ambitious demagogue hoarding wealth during a life-time to endow an institution or erect a statue to preserve his name from oblivion; and here the truly pious and virtuous leaving their goods for the advancement of religion and the spread of the gospel. In all these forms charity is ever the most God-like and radiant of the virtues. But how much more noble and more admirable does it appear when coming as a gift during the life-time of the donor, who then shares his possessions with his needy brother, and watches with tender solicitude the resulting benefit! To give with posthumous generosity to the heathen of distant lands, and beyond far-off seas, is noble indeed; but more noble, more beautiful is it far, to see wealth shared during a life-time with the beggar at one's door-step.

How beautifully is this idea illustrated in the charming poem of the "Vision of Sir Launfal," a knight of old, who, leaving untended the poor at his gate, sought to recover, for the love of God and at the point of his lance, the Holy Grail from far-distant Palestine! Returning disappointed and dejected, the Christian soldier sees at his castle-gate a leper, miserable, wretched outcast. Suddenly he feels "that one touch of nature which makes all mankind kin," and he is inspired with the impulse to pity and to aid him as he pleads for alms:

"And Sir Launfal said: 'I behold in thee
An image of Him who died on the tree;
Thou also hast had thy crown of thorns,
Thou also hast had the world's buffets and scorns,
And to thy life were not denied
The wounds in the hands, and feet, and side:
Mild Mary's son, acknowledge me;
Behold through him I give to Thee.'

"As Sir Launfal mused with a downcast face,
A light shone round about the place;
The leper no longer crouched at his side,
But stood before him glorified,
Shining and tall and fair and straight
As the pillar that stood by the Beautiful Gate.

"His words were shed softer than leaves from the pine,
And they fell on Sir Launfal like snows on the brine,
Which mingle their softness and quiet in one
With the shaggy unrest they float down upon;
And the voice that was calmer than silence said:
'Lo! it is I, be not afraid!
In many climes without avail
Thou has spent thy life for the Holy Grail;
Behold it is here, this cup which thou
Didst fill at the streamlet for me but now;
This crust is my body broken for thee,
This water his blood that died on the tree;
The Holy Supper is kept indeed,
In whatso we share with another's need;
Not what we give, but what we share,
For the gift without the giver is bare;
Who gives himself with his alms feeds three,
Himself, his hungering neighbor, and Me.'"

Generous donors of these most noble charities, sons and daughters of one whose name will never fade from the annals of American medicine, commissioned by my colleagues I come to you the bearer of threefold thanks! In the name of Science, for which you have shown so much solicitude; in the name of Medicine, for which you have so nobly pledged your appreciation; in the name of Humanity, which for cycle upon cycle will profit by your liberality, from the deepest depths of our hearts we thank you!

"*Tout lasse, tout casse, tout passe,*" says a quaint old French proverb. The only exception to the truth embodied in its simple alliteration is to be found in this world in the enduring pleasure which is born of good deeds done to our fellow-men. God grant that that enduring pleasure may be yours, and that it may abide with you to the end of life's pilgrimage!

May the wisdom, the resources, and the skill which centuries of labor have bestowed upon medicine be ever in their best and brightest estate when called for by you in the hour of your sorest need. May the bread which you have so lavishly cast upon the waters be returned to you in prosperity in this world, and in life in that which is to come.

Original Communications.

ANALYSIS OF FIFTY CASES OF CROUP TREATED BY INTUBATION OF THE LARYNX.

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In the "Medical Record" of October 29, 1887, I published a summary of my first fifty cases of croup in private practice treated by intubation of the larynx. I also referred to the cases of sixty-five hospital patients who were operated on during the preceding five years while I was developing and perfecting the tubes and accessory instruments.

The following table comprises another series of fifty cases, also in private practice, treated during the past year, or from November 16, 1886, to November 18, 1887. Of several additional cases seen during the same period in which intubation was at one time considered necessary but that finally struggled through without operative interference, I will refer briefly to only two. Quite recently I was called in the night by Dr. E. Le Fevre to intubate a patient of his, a boy six years old, on the seventh day of croup. The stenosis was so marked that each inspiration suspended the pulse at the wrist, owing to the excessive quantity of blood sucked into the lungs. When I arrived the patient was somewhat better, and was still further improved by an emetic of turpeth mineral. I watched him for over an hour, and left without operating. We believed that if we could get him through that night the danger, in all probability, would be over, as the disease had already lasted about the average length of time, and the early morning, which often brings some relief, was near at hand. The sequel proved that this view was correct, as there was no recurrence of serious dyspnœa. The voice in this case was good, notwithstanding the marked obstruction, and this, together with co-existing expiratory dyspnœa, proved the stenosis to have been subglottic. This patient was also seen by Dr. Jacobi.

Another case occurring in my own practice about the same time was that of a girl, aged seven years, in whom the larynx was invaded almost coincidently with the appearance of the exudation in the pharynx. Urgent dyspnœa lasted throughout the second night and up to noon of the third day, at which time I visited the patient with the intention of intubating. I waited for the effect of five grains of turpeth mineral, which acted promptly, and gave so much relief that the operation was postponed. Croupy cough, with loss of voice and occasional attacks of spasmodic dyspnœa, continued for a week longer, but operative interference was never necessary. The air was kept moist by a constant supply of steam carried under a sheet thrown over the head of the bed, the latter being very high and the temperature of the room at about 75° F. Dover's powder in doses of two grains was found very effectual in relieving the painful irritating cough and the spasm of the glottis to which it gave rise.

Both of these patients took the bichloride of mercury from the very inception of the disease, and I believe that if this remedy were administered in all cases of croup from the beginning, with proper care, a larger percentage of recoveries, both with and without surgical aid, would be the result.

In my own case gr. $\frac{1}{48}$, diluted with two teaspoonfuls of water, was given every hour, but this proved too irritating and gave rise to pain in the stomach and repeated attacks of vomiting when administered for less than twenty-four hours. It was therefore suspended for several hours and then given more largely diluted, without further inconvenience. It was again suspended for several hours on the fifth day, owing to the occurrence of two or three loose passages, and subsequently given in half the dose.

Dr. Jacobi, who also saw this case in consultation, says that gr. $\frac{1}{50}$ should be diluted in half an ounce of water, and larger doses proportionately. While preparing this article I was called to intubate a girl five years old, croupy less than twenty-four hours, who was taking gr. $\frac{1}{40}$ of the bichloride in tablet form placed on the tongue every hour. She was complaining of severe pain in the stomach, the cause of which was not suspected. I find that this is the most common method of administering this drug, and the only reason that it does not more frequently excite gastritis or gastro-enteritis is the fact that the stomach usually contains more or less food or drink, and generally of an albuminous nature. Given in such concentrated form on an empty stomach, it must prove highly injurious.

By referring to the following table it will be noticed that out of the fifteen cases intubated during the past autumn there were eight recoveries. This I attribute in part to the bichloride of mercury which was used in the majority of them, and in part to a less fatal type of the disease than prevailed last winter and spring.

Case LI.—This case presents several interesting features. The patient was recovering from an ordinary pharyngeal diphtheria, the membrane having almost entirely disappeared, when she was attacked with measles. The exudation reappeared in the pharynx and rapidly invaded the larynx. Dyspnœa recurred on the fifth day after intubation, and a very thick cast of the trachea was expelled immediately after the removal of the tube, with complete relief. Two days later I was sent for again and found her suffering from extreme dyspnœa, expiratory as well as inspiratory, but having a good voice. I recognized it as a case of subglottic stenosis and was prepared to use some force in reinserting the tube, which I found to be necessary. The tube was again removed in two days and there was no recurrence of the dyspnœa, but complete paralysis of the muscles of deglutition soon developed and it was found impossible to give any kind of nourishment by the mouth. Feeding by the rectum was resorted to as long as it could be borne, but the stomach-tube could not be used owing to the opposition of the ignorant parents, and the patient died from inanition almost three weeks after the final removal of the tube.

No.	Date.	In consultation with—	Sex	Age.	Duration, before intubation, of —		Urine.	Cause of death.	Complications before intubation.	Result.
					Croup	Pharyngeal diphtheria.				
	1886.*									
51	Dec.	Drs. Wallace and McLoughlin.	F.	9 y.	2 d.	10 d.	Not exam.	Inanit'n, paralysis.	....	Died 3 w. aft'r remov'l of tube
52	"	My own case	M.	3 y. 3 m.	1 d.	Present.	No album'n.	Exten. to bronchi.	....	Died 3 d. 21 h. after intub'n.
	1887.									
53	Jan.	Dr. O. P. Honegger	F.	6 y. 5 m.	1½ d.	"	Not exam.	" "	....	Died 5 d. 2 h. " "
54	"	Dr. J. M. F. Egan and Dr. J. P. Daly	M.	3 y. 5 m.	1 d.	"	Albumin.	Not known	....	Died 4 d. 14 h. " "
55	"	Dr. B. G. Cook	F.	3 y. 4 m.	1 d.	"	"	Sepsis	A hopeless, septic case.	Died 17 h. " "
56	"	Dr. J. F. Holmes	M.	4½ y.	3 d.	"	"	Pneumonia	....	Died 9 d. " "
57	"	Dr. J. F. Holmes	F.	2 y. 10 m.	1½ d.	"	"	Exten. to bronchi.	....	Died 1 d. 4 h. " "
58	"	Dr. J. H. Dew	M.	3½ y.	1 d.	"	Not exam.	Pneumonia	Extensive pneumonia, measles.	Died 62 h. " "
59	Feb.	Dr. Glück	M.	4½ y.	1½ d.	None.	"	Exten. to bronchi.	....	Died 16½ h. " "
60	"	Dr. Hemingway	F.	2½ y.	15 h.	3 d.	"	" "	....	Died 14½ h. " "
61	"	Dr. Conrad Lange	M.	2 y. 8 m.	4 d.	5 d.	Albumin.	Pneumonia	....	Died 9 d. " "
62	Mar.	Dr. J. Lewengood and Dr. P. W. Cremin	M.	3½ y.	3 d.	6 d.	"	....	....	Recov'd; wore tube 1 d. 1 h.
63	"	Dr. G. C. H. Meier	F.	2½ y.	1 d.	None.	Not exam.	Exten. to bronchi.	....	Died 1 d. after intubation.
64	"	Dr. Robert Milbank	F.	5 y.	2 d.	"	Albumin.	....	....	Recovered; wore tube 6 d.
65	"	Dr. Feigenblatt and Dr. Conrad.	M.	18 m.	1½ d.	4 d.	No album'n.	....	....	Recov'd; wore tube 4 d. 4 h.
66	"	Dr. Janvrin and Dr. C. E. Billington	F.	4 m.	2 d.	7 d.	Not exam.	Broncho-pneumo.	....	Died 1 d. 16 h. after intub'n.
67	"	Dr. S. Meltzer	F.	8 y. 9 m.	4 d.	7 d.	"	Exhaustion	....	Died 1½ d. after intubation.
68	"	Dr. J. T. Deyo	M.	3 y. 7 m.	2 w.	2 w.	No album'n.	....	....	Recov'd; wore tube 3 d. 21 h.
69	April.	Dr. H. Hermann	M.	23 m.	3 d.	1 d.	Not exam.	Exten. to bronchi.	....	Died 1 d. after intubation.
70	"	Dr. R. B. Burton	M.	2 y. 2 m.	3 d.	None.	No album'n.	" "	....	Died 2 d. after intubation.
71	"	Dr. E. Elliot and Dr. A. Jacobi.	F.	19 m.	3 d.	"	Albumin.	Asthenia	....	Died 2 d. 2½ h. after intub'n.
72	"	Dr. Berghaus	F.	4 y.	3 d.	10 d.	"	Exten. & nephritis.	....	Died 2 d. 4 h. " "
73	May.	Dr. P. W. Cremin	F.	4 y. 9 m.	3 d.	3 d.	"	Nephr. & exhaus.	....	Died 7 d. " "
74	"	Dr. H. Bosch	M.	5 y. 9 m.	1 d.	4 w.	"	....	Scarlet fever with diphtheria four wks. before.	Recov'd; wore tube 4 d. 10 h.
75	"	Dr. L. Burgheim	...	7 y. 1 m.	12 h.	None.	No album'n.	....	....	Recov'd; wore tube 4 d. 10 h.
76	"	Dr. Rudisch	F.	3 y. 1 m.	1½ d.	14 d.	Not exam.	Exten. & pneumo.	....	Died 2 d. 5 h. after intub'n.
77	"	Dr. Bleyer and Dr. Reid	...	3 y.	1½ d.	None.	"	Exten. to bronchi.	....	Died 1½ d. " "
78	"	Dr. J. F. Curry	M.	4 y. 9 m.	3 d.	4 d.	Not exam.	....	....	Recovered; wore tube 4 d.
79	"	Dr. J. Baran	F.	4 y. 8 m.	1 d.	3 d.	"	Heart failure ...	Sepsis	Died 17 h. after intubation.
80	"	Dr. V. Mravlag and Dr. J. S. Green †	M.	3 y. 2 m.	2 d.	5 d.	Albumin.	Exten. & pneumo.	....	Died 1 d. " "
81	"	Dr. Vedder and Dr. Wilcox	M.	7½ y.	1½ d.	2 d.	"	Nephritis, pneumo.	....	Died 1 d. 18 h. after intub'n.
82	July.	Dr. W. B. Anderton and Dr. A. J. Magnin	M.	2 y. 5 m.	12 h.	2 d.	Not exam.	Exten. & pneumo.	....	Died 22 h. " "
83	"	Dr. E. Sanders	M.	2 y. 5 m.	1 d.	2 d.	"	Pneumonia	....	Died 8 d. 19½ h. " "
84	"	Dr. R. Stein	F.	16 m.	1 d.	2 d.	"	Exten. to bronchi.	....	Died 26 h. " "
85	Sept.	Dr. J. M. F. Egan	F.	4 y.	4 d.	12 d.	Albumin.	Convulsions, exten.	....	Died 1 d. 22½ h. " "
86	Oct.	Dr. L. Conrad	F.	5½ y.	2 d.	4 d.	"	Extension, nephritis, sepsis.	....	Died 1 d. 13 h. " "
87	"	Dr. A. H. Goelet	M.	4 y. 5 m.	3 d.	Present.	"	....	....	Recov'd; wore tube 10 d.
88	"	Dr. Glück and Dr. Holthusen.	M.	5 y.	2 d.	None.	No album'n.	....	....	Recov'd; wore tube 5 d.
89	"	Dr. G. M. Vandegrift	M.	2 y.	12 h.	6 d.	Not exam.	....	....	Recov'd; wore tube 3 d. 19½ h.
90	"	My own case	M.	5 y.	1½ d.	Present.	Albumin.	Exten. & pneumo.	....	Died 6 d. 18 h. after intub'n.
91	Nov.	Dr. Daniel Lewis	F.	4 y. 5 m.	3 d.	None.	No album'n.	....	....	Recov'd; wore tube 6 d. 6 h.
92	"	Dr. W. G. Robinson	F.	5 y.	1 w.	1 d.	Not exam.	Exhaustion	....	Died 1 d. after intubation.
93	"	Dr. P. H. Pyne ‡	F.	5½ y.	3 d.	Present.	Albumin.	....	....	Recov'd; wore tube 7 d. 21½ h.
94	"	Drs. J. B. and B. C. McIntyre.	M.	22 m.	1½ d.	1½ d.	Not exam.	....	....	Recov'd; wore tube 6 d. 21 h.
95	"	Dr. W. N. Guernsey	F.	4 y. 2 m.	2 d.	3 d.	Albumin.	Sepsis, extension.	....	Died 1 d. after intubation.
96	"	Dr. H. J. Schiff	F.	3 y. 2 m.	2 d.	Present.	"	Double pneum'nia.	....	Died 9 d. 21 h. after intub'n.
97	"	Dr. A. Hodgman	M.	6 y. 7 m.	3 d.	10 d.	"	....	....	Recov'd; wore tube 3 d. 9 h.
98	"	Dr. C. E. Nammack	M.	3 y.	2 d.	4 d.	....	Exhaustion	....	Died 3 d. 8 h. after intub'n.
99	"	Dr. C. H. Grube	F.	4 y.	1 d.	2 d.	Not exam.	Exten. to bronchi.	Sup. of urine	Died 2 d. 9 h. " "
100	"	My own case	M.	9 y.	2 d.	Sever'l d.	Albumin.	....	....	Recov'd; wore tube 4½ d.

No.	Age.		Recoveries	No.	Age.		Recov'ries	No.	Age.		Recov'ries	No.	Age.		Recov'ries
	Yrs.	Mos.			Yrs.	Mos.			Yrs.	Mos.			Yrs.	Mos.	
1	0	4	0	2	2	6	0	2	3	6	1	2	5	6	1
1	1	4	0	1	2	8	0	1	3	7	1	1	5	9	1
1	1	6	1	1	2	10	0	3	4	0	0	1	6	5	0
1	1	7	0	2	3	0	0	1	4	2	0	1	6	7	1
1	1	10	1	1	3	1	0	2	4	5	2	1	7	1	1
1	1	11	0	2	3	2	0	2	4	6	0	1	7	6	0
1	2	0	1	1	3	3	0	1	4	8	0	1	8	9	0
1	2	2	0	1	3	4	0	2	4	9	1	2	9	0	1
2	2	5	0	1	3	5	0	4	5	0	2	50	....		15

Total, 50; males, 25; females, 23; not stated, 2; recoveries, 15, or 30 per cent. Average age of patients that recovered, 4 yrs. 8 mos.; of patients that died, 3 yrs. 9 mos.

* The case referred to in a former table as having been overlooked I have transferred and, for my own convenience, numbered 170.

† This case was in Elizabeth, N. J.

‡ Yonkers, N. Y.

NOTE.—A boy, six years and a half old, seen with Dr. W. H. Hall, and intubated December 31, 1886, for the following reasons was not counted: On the second day following the operation he was progressing without an unfavorable symptom, but after my visit coughed out the tube. I had given particular instructions that in case this accident occurred there was no necessity for calling me as long as the breathing continued free. This advice often saves a hasty summons in the night, as in many cases the obstruction does not return for several hours after the rejection of the tube. On making my visit the next day, I found the patient moribund and reinserted the tube, but he never rallied. The struggle for breath had continued for about fifteen hours, and was fully recognized by those in attendance without any effort to notify me. I subsequently learned that the child was an orphan and probably very much in the way.

CASE LV.—This was a septic, hopeless case with such extreme tumefaction of the epiglottis and aryepiglottic folds that it was difficult to locate the entrance to the larynx. The mother readily consented to the operation after being informed that there was no hope whatever of recovery, but that it would prevent death by slow strangulation.

CASE LVIII.—The patient had extensive pneumonia following measles when intubated.

CASE LXII.—This case is of interest as being the only one up to the present time in which I pushed down membrane in sufficient quantity to produce apnœa on the first introduction of the tube. As soon as it was removed by the string, which was still attached, a cast of the trachea was expelled, but the dyspnœa continued as before and reintubation gave complete relief. The tube was expelled in twenty-six hours and never needed again. With one exception, this is the shortest time the tube has been retained in the larynx with recovery in my own cases.

CASE LXXV.—It is not known how long the tube was retained in this case. Dr. Burgheim believes that it was expelled from the larynx and swallowed during an attack of vomiting within an hour after its introduction. It was certainly not in the larynx the next morning—inserted at 10.30 P. M.—as both cough and breathing were croupy with considerable dyspnœa, which continued with loss of voice for almost a week, but no further interference was called for.

This case is of interest as being only the second out of 173 cases so far in which the tube after escaping from the larynx and without any interference entered the stomach; also for the length of time—ten days—required for its passage through the alimentary canal. The tubes are so long that when the lower extremity leaves the larynx the upper extremity is in close proximity to the front teeth. This accident can, therefore, occur in only one of two ways: (1) Coughing it out during sleep or semi-consciousness, and (2) by being projected up behind the soft palate in the act of coughing or vomiting. In the latter case it must of necessity enter the œsophagus. It is quite possible that some children intentionally swallow the tube in order to get rid of it and prevent its further use. I had one boy four years old who, with this object in view, dented the tube with his teeth. I have known others, on getting possession of the tube when no one was present, to throw it to a considerable distance or hide it where they supposed it would not be found.

I was recently requested by a physician who had had considerable experience with intubation to perform tracheotomy on a little patient of his for the purpose of removing a tube that had passed into the trachea. At the usual time repeated attempts to remove it were made without success. He possessed an unusual amount of coolness and dexterity, and was certain that he had not lacerated the larynx with the extractor, and I was equally certain that by no other means could the tube have entered the trachea. I found the patient suffering from extreme dyspnœa, which had recurred only after the last attempt at extraction, with croupy cough and croupy breathing, and, instead of opening the trachea, placed another tube of the same size in the larynx with complete relief. I then requested the physician to insert his finger and push it through if he could. This convinced him that the other tube was not in the trachea, and a more thorough search of the apartment resulted in finding it behind the bed, where the little fellow had concealed it, in all probability, several days before the attempt to remove it from the larynx had been made. This patient made a good recovery, notwithstanding the excessive irritation to which the larynx was subjected and the fact that he was obliged to take care of himself as best he could during the night, his parents being poor, hard-working people who could not lose their sleep and work during the day.

No doubt many cases similar to this have occurred, and it is not the first of this nature that has been reported. It teaches the important lesson that the extractor should never be inserted until the head of the tube is distinctly felt by the finger. The swollen epiglottis and ary-epiglottic folds may overlap its upper extremity even to the extent of producing serious obstruction in rare cases, but offer very little resistance to the entrance of the tip of an ordinary-sized finger, and one of extraordinary size should be used only in the less vital cavities.

CASE LXXXVII.—Before the removal of the tube, which was very much obstructed, on the fifth day the respirations were sixty-eight a minute, temperature 104·5°, mucous râles all over the chest, urine loaded with albumin. Marked cyanosis showed itself in ten minutes, and the tube was cleaned and reinserted with great relief to the breathing. It was again seriously obstructed, and the patient suffered from severe dyspnœa during the greater part of the night preceding its final removal on the tenth day. The relief was immediate and permanent.

This case shows the importance of warning the parents or nurse to notify the physician immediately on the return of any difficulty in the breathing. As soon as the lumen of the tube becomes seriously encroached upon, the cough ceases to be effective owing to the great reduction in the amount of tidal air, expectoration diminishes or ceases altogether, and the secretions accumulate in the air-passages. In the case just quoted the numerous moist râles heard over all parts of the chest indicated that a fair amount of air was entering the lungs, and yet when the tube was removed there did not appear to be one fourth of its caliber free. Loose secretions that can be blown out, or that will wash out by allowing a stream of water to pass through the tube, do not cause obstruction.

CASE XCVII.—I have already referred to several cases in which the retention of the tube for a few hours in the larynx relieved the dyspnœa for a considerable length of time. In this case it was retained on the first occasion for only five hours, and the dyspnœa was relieved for twenty-three hours. The same tube was then reinserted, instead of a larger one, in order to favor its rejection again as soon as the pressure had reduced the swelling sufficiently to permit of this. This time it was retained sixteen hours, but had to be replaced in four hours. The third time it remained in the larynx nine hours, and the stenosis was permanently relieved. Had it not been expelled, I should have allowed it to remain in position about five days, instead of the thirty hours that it was actually required.

Besides the advantage of taking an ample supply of nourishment without difficulty that these intervals afford, it is the best means of getting rid of the tube at the earliest possible moment. There are still other advantages to which I have already called attention.

As a matter of course, nothing would be gained by using the same tube when the obstruction returns soon after its rejection. It is only in such cases as the foregoing, which are exceptional and very rare in young children, that this plan is advisable, except where loose membrane is known to exist below the tube.

I have already reported two cases in which the tubes suddenly became occluded with a cast of the trachea too large to pass through, and were promptly expelled.

I will briefly report the third accident of this kind in my experience where the tube was not expelled, and sudden death from apnœa resulted. It is not included in the table, and my object in referring to it now is to point out the means by which the accident may be avoided.

On the afternoon of November 25, 1887, I was requested by Dr. C. E. Bruce to see a little girl patient of his of delicate constitution, who had been croupy for only twenty-four hours. The tonsils were hypertrophied, and the mucous membrane presented the ordinary appearances of follicular inflammation, but no false membrane could be seen. As the dyspnœa was extreme, I immediately inserted the 5 to 7 tube, with prompt but not absolutely complete relief, such as always occurs when the obstruction is confined to the larynx. With the first cough I recognized the existence of loose membrane below the tube. I had encountered the same thing so often before without accident that I had ceased to fear it, and removed the string as usual. The breathing soon became perfectly free, and she fell into a quiet sleep. The night was passed comfortably, and on the next morning we found her free from dyspnœa and in fair condition, but the loose membrane had not been expelled. In the evening, or about twenty-seven hours after intubation, during a violent attack of coughing excited by swallowing some lemon-juice, she suddenly choked, became deeply cyanosed, and died, the nurse says, in two or three minutes.

The tube used was two inches and a quarter in length, and, in girls of this age, will reach within about half an inch of the bifurcation. The presence of false membrane so near the bronchi and so early in the disease is usually a fatal omen. I therefore gave a very unfavorable prognosis.

About half an hour after death I removed the tube, and as I did so a distinct hissing sound of escaping air was heard by Dr. Bruce and myself.

This case, aside from its other interesting features, is of particular interest as demonstrating the mechanism by which acute general emphysema, or overdistension of the lungs with air, which is found in a small percentage of the fatal cases of croup, is produced. That portion of the pseudomembranous cast lying loose in the trachea which extended below the tube acted in precisely the same manner as a very thin piece of rubber tubing drawn over the lower end of the tube, and about half an inch longer than it. This, while offering no obstruction to inspiration, would collapse on the first pressure from below, forming a perfect valve, and thus prevent any air from escaping. With a few forcible inspirations, without expiring, the lungs become inflated to their full capacity, and death, in all probability, takes place more rapidly than in the opposite condition of complete obstruction to the entrance of air with free exit, because in the latter the carbonic acid is allowed to escape, while the residual air furnishes some oxygen to the blood.

Had this patient's chest been opened before the removal of the tube the lungs would have been found too large for their cavities, and containing less than the normal amount of blood, which was either squeezed out or prevented from entering by the pressure of the imprisoned air.

In order to prevent the accident that occurred in this case, where loose membrane was known to exist below the tube, several means may be resorted to; but the most important of these is using a smaller tube than that indicated by the scale of years. Had I, for example, removed the 5 to 7 size placed in this child's larynx and inserted the 3 to 4 size, which would have been perfectly safe, the chances would have been altogether in favor of its immediate expulsion, when occluded below, followed by a cast of the trachea, as the outward pressure of the abnormal amount of air in the lungs must have been very great.

Another precaution, and one which I have adopted in several cases, is leaving the string attached and fastening it behind the ear, so that the attendant can quickly remove the tube if necessary. It is objectionable on account of the irritation it produces and the difficulty of preventing the patient from removing it, or cutting it with the teeth. Clearing the trachea of false membrane with a suitable instrument would be the best safeguard against this accident, but it is useless to discuss it until its practicability has been demonstrated. Tiemann & Co. have recently constructed for me a set of membrane extractors which are introduced in the same manner as the tubes, and with the same instrument, but I have not had an opportunity to try them.

There is one other expedient that might prove effectual at the last moment in such cases as the foregoing, and in the extrusion of foreign bodies from the larynx also. It consists in causing a sudden escape of some of the residual air, or, if respiration is not completely suspended, of the residual and tidal air, by taking advantage of the beginning of expiration. This is accomplished by placing the patient across the knees, on the floor, table, or other hard surface, and, while with one hand firm pressure is made on the abdomen to prevent descent of the diaphragm, the other hand, open, is brought down with considerable force on the front of the chest.

A slight cough has repeatedly proved sufficient to lift a metal tube weighing an ounce and three quarters from the adult larynx, and project it to some distance in front of the patient. The method just described accomplishes the same thing as the act of coughing.

The popular custom, so universally practiced, of striking a person on the back who is choking from a foreign body in the throat, can not have any appreciable effect in expelling air from the lungs, but if the blow were made on the front of the chest instead of the back, it would be attended with much greater success.

860 Lexington Avenue.

THE TREATMENT OF FUNCTIONAL NERVOUS DISEASES BY THE RELIEF OF EYE-STRAIN.*

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(Concluded from page 6.)

Case XI. *Chronic Epilepsy.*—Male, unmarried, aged twenty years.

Family History.—No consumption among the ancestors or immediate family. Several members of the family suffer from headaches.

Eye-defects.—Hyperopic astigmatism (0·75 Dc. and 0·50 Dc.); esophoria (manifest) of 6°; and latent hyperphoria of a very high degree. The latter has proved very persistent, and has only lately been satisfactorily corrected. The progress of the case has also demonstrated that a high degree of latent esophoria had to be corrected in excess of what he at first manifested.

This patient was a victim to the severest type of chronic epilepsy. His attacks were extremely frequent and severe. Going from light into darkness would invariably cause an attack and a total loss of consciousness. I personally attended him, in connection with Dr. G. W. Leonard, of New York, when he had fifty-two epileptic seizures in eight hours, each fit lasting exactly three minutes. All medicinal treatment had proved inoperative. His attacks began while he was at school as a child, and were preceded by a difficulty for months of keeping his place on a page while reading. He used to hold his finger on the line to aid him in reading.

His improvement, after repeated tenotomies upon both interni and the left superior rectus, has been most remarkable. His attacks have been decreased over 75 per cent. He is still under observation, with a prospect of still greater improvement, if not of a permanent cure. He has taken no bromides or medicine of any kind save an occasional diuretic (tincture of iron) for sluggish kidneys.

The photographs of this patient, which I now exhibit to you, hardly show the happy change which has occurred since the last was taken, in spite of the complete cessation of the bromides for about eighteen months.

In place of the dull, apathetic, and sluggish features which indicate the impaired mental state of the patient from the bromides, you can see in the second photograph the animated expression and the shortening of the face, which are much more apparent to-day even than when it was taken. The change in his general health and physical strength has been even more marked than his facial changes.

Case XII. *Chronic Epilepsy.* — Female, unmarried, aged nineteen years.

Family History.—Paternal grandmother died of phthisis. The mother has migraine. The brother has migraine. A paternal aunt was insane.

Eye-defects.—A high degree of myopia (3·75 D.) and myopic astigmatism (1·50 D.). Esophoria (manifest) of 9°. A high degree of latent hyperphoria was also discovered later.

Prior to my first examination this young lady was considered a hopeless epileptic. She had been for years under the care of several of our most noted neurologists and oculists. After a partial relief of her abnormal eye-tension by tenotomies, she went over seven months without an attack, and regained her mental faculties, which had been somewhat impaired by bromides. Within the past four months she has had six attacks of epilepsy, two of which followed fright, one an imprudence in eating salads very late and immediately before going to bed, and the fourth after the excitement attending a departure for a pleasure excursion. She has lately manifested a latent muscular defect which I have yet to overcome. From a letter addressed me by her father not long since I quote the following paragraphs:

"Nothing but an inability on my part to pay for your services would persuade me to remove my daughter from your care, and if I could not pay, I would ask you for charity to keep her.

"Her whole being has been altered, and her physical condition is better than for eight years."

The photographs of this patient, which I now exhibit, show a very marked alteration in her physical and mental states, as a result of the relief of the muscular errors detected in the orbits. She is now allowed to enjoy privileges which were considered impracticable prior to this treatment, such as an unrestricted diet, horseback exercise, visits to the city unattended, attendance at social gatherings, etc.

As this case is well known to some prominent medical men of this city, it may be proper for me to state that since October 10, 1886 (some fifteen months), this patient has had but eight epileptic seizures. Prior to that date my records go to show that, even when under bromides, from one to six fits a day often occurred, and that the nocturnal attacks (which were very frequent) were not always noted. It is safe, therefore, to say that, had she received no medicinal treatment or correction of her eye-defects during the past fifteen months, the total number of seizures would probably have been more than a hundred times this number. She had been known to have as high as seventeen epileptic seizures during one night. Her attendant has assured me that since my treatment was commenced all nocturnal attacks have ceased.

The point may be raised that a report of any epileptic case, until the full limit of three years has been passed without an attack and without the employment of any medicine which would control the epileptic tendency, must be considered as somewhat premature. In reply, I would say that the cases I have brought forward are not represented as cases of radical cure. They are adduced simply as a clinical evidence that the frequency of such attacks has been greatly modified, and in two instances completely controlled for long periods of time without the aid of drugs. On the other hand, there are now to my knowledge several cases of chronic epilepsy similarly treated that might be brought forward (did I deem it necessary to quote from the experience of another) which have fulfilled all the requirements which would justify the belief in a radical cure of chronic epilepsy. One of these patients has passed over seven years without a fit, and several have exceeded the three-year limit.

We all admit, I think, that epilepsy is certainly the gravest of all the functional nervous maladies, and that it is, as a rule, incurable by drugs; hence, as I have remarked in a previous discussion concerning this subject, "one radical cure of epilepsy without the aid of drugs offsets a thousand failures as a scientific proof of a discovery."

It is impossible for any one not familiar with the difficulties encountered in the treatment of these subjects (already discussed) to appreciate the fact that, in some cases of epilepsy, eye-defects may exist which can not be thoroughly rectified; and that, even in favorable cases, time and patience are important factors in the treatment.

Epileptics usually present, in my experience, in addition to errors of refraction, anomalies in both the lateral and vertical movements of the eyes; and in some cases the oblique movements are probably at fault. Moreover, experience with these subjects demonstrates clearly to my mind that the muscular anomalies which exist are generally "latent" to a marked degree.

It should be remembered also that a victim to chronic epilepsy who is rendered by any treatment as free from attacks *without the bromides* as he was when under their deleterious influence, has been *very markedly benefited;* again, that if a marked diminution of the attacks has been effected, the patient has double cause for gratitude; finally, that if the attacks are arrested *in toto* without drugs, it is to-day one of the most remarkable facts recorded in medical literature.

There is a point where opposition to carefully made clinical statistics respecting new views ceases to be conservatism. True conservatism is the brake upon the engine of progress. It is to be used in checking its speed when going too fast, but not in preventing its advance, even if the country is an unexplored field. Too often in medicine the term conservatism has become a favorite synonym for bigotry and intolerance.

Respecting the *relationship of chorea to anomalies of the visual apparatus* I would make the following suggestions:

1. Choreic subjects belong to one of two classes: (1) Those who tend to get well under almost any treatment or even without treatment, and (2) those who fail to get relief from any medicinal aid. The latter tend to run a chronic course, usually one of unfavorable progression.

2. The chronic form of chorea is one of the most serious and hopeless of nervous maladies. It is not infrequently associated with epilepsy or with mental impairment.

3. Both forms of chorea are based, as a rule, upon a well-marked neuropathic or tubercular predisposition.

4. The pathology of chorea is not known. No one has ever proved that it was a "constitutional disease," in the sense that an organic lesion was essential to its development.

Now, the remarkable case which I report belonged, without question, to the class which I think is generally regarded by neurologists as incurable, and as offering but little hope of marked improvement under any form of medication. In this girl, at least, all such attempts at relief had proved of no benefit. The convulsive movements had persisted for over thirty years, and the condition of the patient has steadily grown worse in spite of the best medical care. She had probably had a few epileptic seizures in girlhood, but her mind had remained unimpaired.

When Dr. G. T. Stevens read his paper on the relationship between refractive errors and chorea in 1876, he advanced views that were new to the profession. Within a year a paper on the same subject was published by another,* in which the view of Dr. Stevens, that hyperopia constituted an important element in most cases of chorea, was very stongly combated. The latter paper has been quite extensively quoted. It may not be inappropriate for me, therefore, to carefully analyze the paper referred to in this connection, as I feel that the conclusions of the critical reviewer are misleading, and certainly not in accord with my own observations.

This observer drew his conclusions from an examination of thirty-one cases of chorea, most of which, if not all, were taken from dispensaries. It is safe to infer, therefore, that the patients were not well educated. They may not have even known their letters sufficiently well to be regarded as accurate in reading test-type.

In the second place, the ages of the thirty-one patients reported show that twenty-two were less than twelve years of age. Four were six years of age, and one was only three and a half; one was seven, three were eight, three were nine, four were ten, and six were eleven years old. The question naturally arises whether (at these ages) the tests of vision usually made by the aid of test-types when the patient is well under atropine are reliable in children that are presumably ignorant.

In the third place, seventeen out of the thirty-one patients were found to be emmetropic in one eye or both when atropine was used by this observer. This is certainly a very remarkable fact, as it is a proportion which is contradicted by statistics gathered by equally competent observers from the examination of children's eyes under atropine.†

In the fourth place, the percentage of hyperopia and hyperopic astigmatism combined constitutes, according to this observer, about 55 per cent. of the total number. No myopia or myopic astigmatism was detected in any of the thirty-one cases. The latter fact is remarkable, and seems to cast further doubt upon the cases reported as "emmetropic."

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* Dr. C. S. Bull, "Med. Record," June, 1877.

† Cohn shows that, in 299 eyes under atropine, no case of absolute emmetropia was detected. Hausen found but 26 emmetropic eyes in 1,610, and Dürr but 30 in 414. A. Randall states, in his article on "The Refraction of the Human Eye, a Critical Study of the Examinations of the Refraction, especially among School-children" ("Am. Jour. of the Med. Sci.," July, 1885), that only $7\frac{36}{100}$ per cent. of 1,834 eyes of infants and school-children were found to be emmetropic.

Again, nineteen of the thirty-one patients are reported as having had "insufficiency of the interni." Now, I have examined within the last three years the eyes of a very large number of patients who were afflicted with various nervous disorders, and I have given special attention to the state of the eye-muscles detected by appropriate tests in these cases. I have found the condition of "insufficiency of the interni" to be a comparatively rare one when Graefe's test was employed with the test-object (preferably a candle-flame) at twenty feet from the eye. It is reasonable to infer, therefore, that the tests made by this observer were such as to require accommodative efforts (probably the line-and-dot test at fourteen inches). Such tests, if made under atropine, are certainly open to criticism and probable correction. Even if not made under atropine, this form of test is only of value in connection with the other.

The critical reviewer mentions a certain "Martin family" as a proof to his mind that a "neurotic taint" exists in choreic subjects. Now, the four choreics of this family were all hyperopic, while five who were not so had no chorea. This fact would seem to confirm Dr. Stevens's view. No one disputes the fact that a "neurotic predisposition" is present in most choreic subjects; but the view that eye-defect tends to create this tendency seems to be less generally accepted.

Finally, the paper here referred to notes a failure to relieve the chorea by the use of glasses, in a few cases where the patients were able to purchase them. If other serious defects existed besides the hyperopia (to the extent shown in the examinations reported by this observer), this is not to be wondered at. Hyperopic glasses will not relieve "insufficiency of the interni" (frequently noted by this observer in his choreic subjects); and the latter is certainly a well-accepted cause of reflex disturbances when it exists, as well as the latent hyperopia that was alone corrected.

In preparing this lecture I have looked carefully over the records of all cases of chorea which I have personally tested for anomalies of the visual apparatus. I have not found a single case where either "manifest" or "latent" hyperopia did not exist. I do not mean to assert that this statement proves anything—but it certainly seems a very strange coincidence, if such it is.

Respecting the "neurotic taint" to which this reviewer attributes the origin of chorea, I would respectfully refer my hearers to a study of this question and its dependency upon anomalies of the visual apparatus in a paper previously quoted from,* and also to tables of a similar purport published (since that article was read at the International Medical Congress) by Dr. George T. Stevens, in his work on "Functional Nervous Diseases." †

I feel that I must add one statement in reference to the *dependence of typical sick headaches and intractable neuralgias upon eye-strain.*

For ten years past I have stated in my lectures that I had yet to encounter a case of typical and periodical sick-headache in which the eyes themselves or the eye-muscles were not at fault. I have never seen any occasion to modify or retract this apparently sweeping assertion. Respecting chronic neuralgia, my experience teaches me that eye-strain is its cause in a very large percentage of such cases.

I would state, however, that I do not regard ophthalmoscopic tests for latent refractive errors as conclusive,* because I have too often found such examinations (even when made by those most skilled in that special line of work) to be in error. I have detected this error by means of the full effects of atropine upon the accommodation of the patient and the employment of Snellen's test-types. In very young children, and in the ignorant classes who can not read test-type, the ophthalmoscope unavoidably becomes the only means of determining refractive errors with an approach to accuracy.

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* "Med. Register," November 19, 1887.

† D. Appleton & Co., 1887.

* There are two sources of error which are possible in all ophthalmoscopic examinations as a step toward the determination of refraction. The first of these is that the observer may not be able to perfectly relax his own accommodation while using the instrument. Most oculists of large experience believe that they can do this with certainty—a belief which is perhaps not always well founded. The second source of error lies in the accommodation of the patient. This can not always be relaxed by instructing the patient to look at an object twenty or more feet distant from the eye. I am satisfied that mistakes in the determination of refractive errors by the ophthalmoscope are far more frequent than are generally supposed. For the past three years I have examined the eyes of almost every patient intrusted to my care by the aid of test-type after the pupils have been fully dilated by atropine. I am not aware that I have ever lost a patient by the use of this drug. In my experience, intelligent persons are always willing to submit to a temporary inconvenience for the purpose of obtaining *positive information* respecting any point that is deemed of scientific value in relation to themselves. I have personally come to regard the ophthalmoscope as an unreliable instrument for the determination of refraction. Its use is rendered compulsory, however, in very young children, and in those who, from ignorance or feeble-mindedness, are unreliable in their reading of test-type. It is generally accepted, furthermore, among our best oculists that astigmatism (a recognized source of nervous perplexity) is always estimated more accurately with the pupil widely dilated by atropine than with the normal pupil. The reasons which I have already given must suffice to explain why the use of atropine constitutes a most important preliminary step to the detection and estimation of any error in the eye-muscles, although many other arguments might be brought forward to prove its advisability in some subjects. Again, the view is held that no examination for suspected muscular error in the orbit should be regarded as conclusive for diagnosis, or as a basis for any surgical procedure, until the eye has been proved to be free from refractive error, or rendered as nearly emmetropic as possible by properly selected glasses. It is, of course, advisable during the first interview with each patient to note and record any "manifest" defect in sight. If such exists, each eye should be provided with the glass which gives the best vision for each eye (the two eyes being always tested independently of each other). After such correction, the different tests employed to detect muscular anomalies should then be made, and the results of each test should be recorded as the "manifest muscular error." At the second interview, with the pupils fully dilated by atropine, the same steps should be repeated. We thus learn, in many cases, the existence of refractive conditions which the first interview did not reveal. We record such as "latent" refractive conditions. By the aid of suitable glasses any latent refractive error found is then to be corrected; subsequent to this correction the muscular movements are to be tested with each eye temporarily adjusted to distant vision by suitable glasses.

The muscular apparatus of the organ of vision is too intimately associated with sight-perceptions (because such perceptions serve to call the eye-muscles indirectly into action and to regulate eye-movements) to be physiologically considered as an independent piece of mechanism from the eye itself; hence in all cases it is vital to success in treatment that the nearest possible approach to emmetropia should be obtained in every patient before the muscles are examined for disturbances of equilibrium. Very marked disturbances in the proper adjustment and tension of the eye-muscles which apparently exist in some subjects may be modified or be totally corrected in some patients by the fitting of a proper glass to each eye.

Now, I would call attention to a very important clinical fact—viz., that the amount of error detected in any given case, when the eye-muscles are tested, does not necessarily indicate the full amount of abnormal eye-tension that actually exists. The results of ordinary tests simply tell us *how much eye-tension exists which the patient can not overcome by any effort of which he is capable.* Upon this one point too great stress can not be laid, as it sheds much light upon the clinical history of many patients who suffer from eye-strain. All authorities recognize the fact to-day that a patient may have a very marked congenital shallowness of the eye, and apparently have normal vision, or possibly appear to be even near-sighted prior to the use of atropine. Subsequently to its use, the same patient will, however, show a high degree of far-sightedness (hypermetropia), because the ciliary muscle (temporarily paralyzed by the atropine) can not overcome or (to speak more technically) compensate for the abnormal shallowness of the eye. Unfortunately for science, we have as yet no drug which aids us in determining the existence of a "latent" muscular error in the orbit, as we are now able to do by the aid of atropine in case a latent refractive error is suspected to exist in a patient.

Yet are we justified in concluding that latent muscular anomalies do not exist? Most assuredly not. There is the strongest clinical evidence to the contrary. A few months ago I examined the eyes of a prominent physician on three consecutive days, and I was unable to detect (either before or after prismatic exercise of his eye-muscles) any change in his ocular condition from the one noted at the first examination. His symptoms, however, led me to believe that a greater muscular error existed than he showed, although the anomaly detected was a very marked and important one. I therefore instructed him to wear a prism until the next examination, which fully corrected the error then detected. Less than two hours later I accidentally had the opportunity of again examining his eyes. His muscular error was then, to my surprise, exactly double what it originally appeared to be. He was again given a full prismatic correction for the defect detected. Twenty-four hours later he was examined for the fifth time, and he still showed an excess of two degrees over the record of the day previous. He was again given a full prismatic correction; but from that time he failed to exhibit any further alteration in his ocular tests. The relief afforded by prisms * was so instantaneous and permanent (while they were worn) as to prove conclusively that the prisms were wisely selected, and that

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* Prismatic glasses are not only inadequate as satisfactory remedial agents in most cases, but they may be positively injurious to certain classes of patients. Few, if any, of our prominent oculists have perhaps ordered as many prismatic glasses as the chief advocate of the method now under discussion. Yet, in spite of this fact, strict limitations upon their field of usefulness (not generally taught) seem to be rendered probable by late investigations. A careful study of the different movements of the eyeball, and of the combination of muscles required to produce some of them, must impress even the most casual reader with the idea that an agent (such, for example, as a strong prism) which tends to restrict the movements of any one muscle may do harm if persistently worn. Some patients are peculiarly susceptible to such influences. I have encountered a large number of patients whose eyes refused to tolerate a prismatic glass. Their symptoms were at once made worse whenever they attempted to correct an existing muscular anomaly by wearing a prismatic glass. On the other hand, many patients are benefited at once by the use of prisms, and suffer no inconvenience of any kind from them. What are we to infer from this statement? Are we to surmise that the prisms were either injudiciously selected or improperly placed, simply because the patient could not tolerate them? I think not! Such might possibly be the case in the hands of a novice, but presumably it is not the case in the experience of one skilled in eye examinations. My own experience in several such instances has shown me that a tenotomy of the muscle exhibiting the greatest tension has been followed by a complete cessation of the nervous symptoms for which the patient sought relief, in spite of the fact that prisms prescribed to correct the same error have proved intolerable to the patient, and have markedly aggravated the symptoms.

There is, however, a practical and important field for prismatic glasses. It is well to keep, as a part of a physician's office equipment, a large number of prisms of different angles. These can be slipped into a frame with the base inward, outward, upward, or downward, as the exigencies of any case seem to demand. They may be loaned from time to time to patients, for the purpose either of verifying a diagnosis or of developing a latent muscular error which the physician may be led (by repeated examinations of the patient) to suspect. When they are well tolerated, the physician may often learn a great deal by their protracted influence. When they are not well borne, it is advisable, as a rule, to discontinue their use at once. It is often wise to prescribe a prismatic glass, also, for a class of patients who are unable (for one reason or another) to submit at the time to tenotomy. Sooner or later, I find that such patients usually return. As a rule, they do so for one of the following reasons: (1) Because they have developed an additional "latent" muscular error, which the prisms naturally failed to correct; (2) because they do not tolerate them well, and are made decidedly worse by their use; (3) because they prefer a tenotomy to the inconvenience of a glass which has to be constantly worn; and (4) because they suffer from eye-fatigue on account of the disturbance to co-ordinate movements of the eyeball. There is no doubt that very many persons with nervous diseases are materially helped (if not radically cured) by the aid of prismatic glasses; but the question naturally arises to my mind in this connection, "Would they not have been more rapidly benefited and permanently relieved with far less inconvenience to the patient by tenotomy?" The view is held that *tenotomy is the only way of permanently relieving abnormal tension of a muscle in the orbit.* There are only two ways of overcoming an abnormal tendency of the visual axes to deviate from parallelism whenever the eyes are directed upon an object more than twenty feet off. One of these is by the aid of a prism; the other is by tenotomy of the muscle which directly aids in producing and perpetuating the deviating tendency. Whenever prisms are prescribed, they afford relief practically in the same way as a "rubber muscle" does in orthopædic surgery; in other words, they compel the muscle which is opposed to the base of the prism worn by the patient to overcome the antagonistic muscle, and also to so adjust the eye as to compensate for the refractive effect of the prism. They practically act, therefore, as a "pulley-weight"—a mechanical device seen in all gymnasiums. Now, if the wearing of prisms had no deleterious action upon those particular muscles, which, in each case, are not at all at fault, and if they invariably exerted only the "latent" insufficiency which developed after their use more accurately represented his true condition than the original observations made at our first interview.

I mention this case not because it is at all unique (for many such instances have been observed), but because it illustrates admirably the existence of "latent" insufficiency, which happened in this case to be developed by the temporary use of correcting prisms.

In the second place, it is not at all uncommon to observe the development of latent muscular anomalies in the orbit, sooner or later, after a partial tenotomy has been satisfactorily and scientifically performed for the correction of a "manifest" muscular error. Sometimes quite a long interval elapses before latent insufficiency shows itself. Again, it shows itself almost immediately.

An epileptic upon whom I operated for eye-defect, who has now been free from attacks for over a year and a half, in spite of the cessation of all drugs, showed me originally only one degree of esophoria. This defect would, I think, have been heretofore regarded by most oculists as hardly worthy of correction, even by a prism. The subsequent treatment of this case demanded repeated tenotomies upon both of the interni, and proves not only that I had a high degree of "latent" trouble to correct (which a one-degree prism would not have helped), but also that the attacks have thus far been totally arrested by the relief of abnormal eye-tension.

In the third place, it has been proved that systematic daily exercises of the various eye-muscles (accomplished by teaching the patient to fuse images which have been rendered momentarily double by a prism held before the eyes) will, in some cases, develop latent muscular anomalies of the orbit.

Finally, it may be stated in this connection that one examination of the various eye movements is not, as a rule, sufficient for a positive diagnosis respecting muscular anomalies. Repeated tests have often to be made before a complicated problem may be satisfactorily solved, even by an expert in this line of examination.

Before I leave this subject it is but proper to say that the cases reported by me (while not a large number in the aggregate) were, without exception, well-marked cases of typical and intractable neuroses. The improvement noted in each case after well-directed treatment of the eyes or the eye-muscles tends to cast a doubt upon the existence of any organic disease. No other causes of reflex nervous disturbances outside of the eyes were detected after a careful search in any of these cases; otherwise it would have been my manifest duty to *relieve all that were found* in my efforts to benefit the symptoms manifested by each patient.

It is not to be expected, nor do I anticipate, that views so radically opposed to the ordinary methods of treatment by medication, now generally advocated for functional nervous diseases, will be accepted at once by the profession at large, even if correct and satisfactorily demonstrated. No great advance in science has ever been made until time has tempered prejudice and modified the prevailing tendencies of thought.

Of late years we, as a profession, have had our attention drawn, however, more seriously than ever before to the clinical importance and the necessity of detection of remote sources of irritation to the nervous centers. We have already learned that the ovaries, the womb, the prepuce, the urethra, the rectum, the alimentary canal, etc., can, in some instances, induce serious nervous conditions which closely simulate the evidences of organic disease. Complete paralysis of both legs has been known to be cured in a child by circumcision. The operation devised by Battey for the removal of the ovaries in subjects attacked with hystero-epilepsy is to-day sustained by the profession, and often performed with the view of removing a merely supposititious source of reflex disturbance. This supposition, in many cases, is based, unfortunately, upon data much less scientific and therefore less reliable than the tests employed to detect anomalies of the visual apparatus. It is safe to question, therefore, if the source of reflex irritation in many patients of this class has been carefully sought for, and if it does not lie more in the eyes than in healthy ovaries,* which are not infrequently sacrificed. Personally, I should not feel justified in taking so serious a step with any patient until every other possible cause of reflex disturbance had been carefully sought for in vain.

There is no doubt that many physicians of prominence are devoting more attention to-day in their practical office work to the determination of latent refractive errors in the eye and disturbances of equilibrium in the eye-muscles than was their habit in years past.

This long-neglected but important element in the "neuropathic tendency" (and perhaps also in the "tubercular predisposition") is now receiving from many sides the most thoughtful consideration. Sooner or later, in my opinion, our views of the causes of functional nervous disease will no longer be those now advanced in most of the works devoted to that field. We shall in time more clearly recognize the fact that drugs do more harm in functional neuroses than good whenever any exciting cause of such a morbid condition persists and can be removed; just as we to-day rely, in case of a joint-disease, more upon mechanical separation of the surfaces of the inflamed joint than upon anodynes to relieve the pain. We shall learn to search more carefully and intelligently for obscure causes of reflex disturbances, and to try the effect of their removal before we resort to drugs. Medication must eventually, in my opinion, become the *dernier ressort* of the physician, in this particular class of nervous diseases, rather than the haven of refuge.

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beneficial effects, this principle of treatment could be more generally applied with benefit. Even then the existence of "latent" insufficiency might, unfortunately, remain unrecognized for a greater or less period of time, possibly to the serious detriment of the patient. On the other hand, if it is satisfactorily demonstrated that tenotomy has been rendered a safe and accurate method of correcting muscular anomalies in the orbit, a fact has certainly been noted that opens a new and shorter route to relief. Such a step enables us, moreover, to decide the question of "latent" muscular defects in any given case.

* Cysts in the ovary are seldom, if ever, wanting; hence they can scarcely be pronounced (when small) an evidence of disease.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & CO.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JANUARY 14, 1888.

EVIL FROM THE STANDPOINT OF FACT.

WHAT is evil? Webster defines it, according to the customary meaning of the word, as "that which produces unhappiness; anything that directly or remotely causes suffering of any kind to sentient beings; disease; calamity; moral depravity." It will be perceived that it is a bold, significant reality, requiring the nicest tact and discrimination in its management. To know how to deal with it at all effectively, a knowledge of its true character and proper place in nature is of first necessity. The origin of evil has long puzzled sages, and fairly bewildered poor simple folk. Savages attribute it to the influence of malign spirits. Others have imagined two divine principles, opposite and antagonistic, one friendly and the other hostile to man. This view is fully as reasonable as that of the Greeks, who ascribed the misfortunes of mankind to the jealousies and other failings of their gods. Attempts to place the origin of evil outside the lines of nature have not met with marked success. Science—happily defined as the orderly arrangement of facts according to an underlying principle—comes to the rescue, and throws light that is positively electric across the path where philosophers, theologians, poets, and sages have groped in vain. She alone discovers, observes, classifies the fruits of good and evil, reduces their phenomena to law, and deals with them as fixed and certain entities that *must be* when the conditions that lead to them are permitted to exist.

A thoughtful consideration and patient study of facts reveal two natural causes for evil. First, there is the most wonderful of all wonderful phenomena, at present inscrutable, that physical and mental qualities, both good and bad, pass down from one person to another in parental or ancestral line, and this so truly that one generation implants into the generation following its virtues and vices, together with the varied combinations of these same strong points and weak points as well. This is descent of evil or of good, of evil *and* of good, phenomena of conception known as heredity. It is a marvelous factor and almost unknown quantity in the formation of structure, quality, and character. The gate of gifts closes upon a man as soon as he is born. "With high magnifiers, Fraunhofer and Dr. Carpenter might come to distinguish in the embryo at the fourth day—this is a Whig, and that a Freesoiler." Yet a certain kind of freedom is one part of fate. For ever wells up the impulse of choosing and acting, an impulse, a power, that may be defined as the vitality of nature always coming to the rescue, to equalize forces and maintain equilibrium, in spite of the tyrant circumstance.

Other physical and mental qualities which are not due to heredity are acquired by imitation at the period of life when imitation is easiest; and these qualities, called into being during the plastic age, good and not good, depend upon the shaping of the life, the mode of existence, the environment. The spirit makes its own house, but afterward the house confines the spirit. "Being made, 'tis circumstance that fashioneth us all." This fact is recognized by the Jesuits, who say that if they can have possession of a child till he is seven, they care not who has him afterward. They are in part right, for early impressions are the strongest. Environment is at once the most hopeful and the most hopeless of forces. There is no escape from its influence—at least not till the philosophic mind is acquired. Then plastic childhood is over, and habits of thought are more or less crystallized. Before that time—such is the vitality of kind, gentle, and just Nature—good environment will overcome poor inheritance, and make the *born* bad good in one generation of goodness. Whoever has strength enough to be wicked has force enough to be good, if only taken in time. Better a live dog than a dead lion—better anything than weakness, which is stagnant. "Send me bad boys," writes a Western farmer in need of help, "work will make men of them." Energy that finds its expression in deeds of violence may be turned into useful channels, and become, as by magic, a benefit instead of a curse to humanity. The innate qualities of some evils may thus be transformed, as when the child, let us say, of a clever forger is taught draughtsmanship, and his hereditary, instinctive faculty is directed into an analogous though healthy channel, thereby making him a skillful artisan and curing his tendency to crime. As force can not be destroyed, it is less expensive to utilize than to suppress it. Waste not, want not, is good advice to those dealing with disorderly energies. If the children of generations of pickpockets are taught to use their criminally deft fingers and delicate touch in some handicraft requiring special capacity of finger, such as watch-making, a healthy function is supplied for a nervous proclivity and a muscular aptitude that would otherwise prove a source of constant temptation. But to attempt to abrogate utterly any criminal tendency without utilizing it in some healthy direction is like trying to sweep back the waves with a broom. As well say "Don't boil!" to the kettle on the glowing coals. Bluff old King Hal was wise in his generation. When Gerald, Earl of Kildare, then in rebellion against him, was brought to London to be examined before the Privy Council, somebody said: "All Ireland can not govern this earl." "Then let this earl govern all Ireland," replied the king. So the rebellion came to an end. Perhaps evil is something like dirt as defined by Lord Brougham—a good thing out of place. At any rate, the force that produces evil is a good thing. It only needs a change of direction at the right time to make it good in its results.

What are the facts in the case? On one side is heredity, on the other environment, and somehow pervading both that mysterious something—called for convenience the vitality of nature—a force "that makes for righteousness" or equilibrium. This is all there is to life. These are its physiological boundaries, and within these lines alone is to be found the vast and only scope of human effort. Heredity and environment are the natural sources of good and evil, the natural sources of power, will, freedom, thought, and necessity, the sum and substance of our being.

Evil is any sheath and clog of organization that man has outgrown. It is an expression of some energy of the kind the occasion no longer requires. Much present evil was once good, born of savage necessity in primitive times, now without reason for being, and destined to be driven forth by the further education of the will. The first and worst races are dead; poor races are dying or waiting to mature into higher. Evil contains within itself the elements of dissolution. It overcomes itself, it disperses. To carry on evil, to be evil, is to suffer disease and prematurely to die. There is not a single instance of a wicked man who is free from disease of body or mind, or who approaches to the attainment of a healthy life. "The wages of sin is death"—is dispersion. Nature removes by degrees whatever is out of harmony with the environment. If the wicked—that is, the undeveloped, the inharmonious—flourish like a green bay-tree, it is only for a time. Whoever plays ill at the game of life is checkmated—without haste, but without remorse.

How to live? That is the problem. What are we set on earth for? To toil? To wrestle, not to reign? Let us frankly say that the education of the will is the object of our existence. This education means incessant change; it is constant expansion from lower to higher forms of self-control. Joy, grief, success, daily dyings, the tongues of evil men, the love of pure souls, are alike means to this end. All there is educates. The vale best discovereth the hill, as Bacon has it; and to know great good means a close acquaintance with little ills. Who are these arrayed in white robes? asks the seer of the Apocalyptic vision. These are they which came out of great tribulation, is the answer; and they hunger no more, neither thirst, and all tears are wiped from their eyes. We speak of sufferings and trials as good, perhaps, in their results; but we hardly admit that they may be good in themselves. Yet they are knowledge—how else to be acquired unless by making men as gods, enabling them to understand without experience? Is there more than one law in nature? Listen to our own Emerson: "Let us build altars to the blessed unity which holds nature and souls in solution, and compels every atom to serve a universal end. Let us build altars to the beautiful necessity which secures that all is made of one piece; that plaintiff and defendant, friend and enemy, animal and plant, food and eater, are of one kind . . . to the necessity that rudely or softly educates man to the perception that there are no contingencies; that law rules throughout existence; that it dissolves persons; vivifies nature; yet solicits the pure in heart to draw on all its omnipotence." Again, what is evil? It is immaturity, ignorance, blindness. It is anything out of the order of time. It is the thing not needed or outgrown—erstwhile useful, perhaps, now useless in its present guise. Evil must either change or die. It does change and it does die.

THE ANNUAL REPORT OF THE SURGEON-GENERAL OF THE ARMY.

The Surgeon-General's report for the fiscal year ending June 30, 1887, is a document of unusual interest. The subject of the health of the army, with its bearing upon the general health of the country, is treated of from a somewhat novel point of view founded upon a division of the United States into certain natural sections. These sections are eleven in number, and they are termed the Atlantic Coast, the Eastern Timbered Plains and Hills, the Appalachian, the Northern Lakes, the Central Timbered Plains and Hills, the Alluvial, the Gulf Coast, the Prairies, the Great Plains, the Cordilleras, and the Pacific Coast. The division is a modification of one made by Mr. Henry Gannett, of the Geological Survey, used in the compilation of the mortality and vital statistics of the Tenth Census, and is shown in a map accompanying the report. The army is so small and so broken up into small commands scattered over a vast territory that there is little if any ground for generalizations from a single year's observations of the influence of meteorological, geological, and other natural conditions upon its health, but similar observations continued for a number of years can not fail to put the Surgeon-General's office, and consequently the medical profession, in possession of data of the most available kind for forming conclusions. In one of these regions, indeed—the Alluvial—comprising the territory stretching along the Mississippi River and the Red River, no troops were stationed during the year 1886, and the mean strength of our entire army was only about half that of so small a nation as Belgium.

The territorial division mentioned is kept in mind throughout the report, in so far as it has any bearing upon the particular subject under discussion, and therefore it is in no narrow sense that the comparisons suggested are set forth; comprehensiveness of view characterizes the document from beginning to end. It is no easy task to make a report on such a plan, and all the more credit will be accorded to the Surgeon-General for having done it when it is remembered that nothing of the sort is demanded by law, precedent, or orders. It is a genuine and highly creditable contribution to a study that is destined to play a great part in the future sanitation of the country, civil as well as military.

In addition, the subjects usually treated of in the army medical reports are dealt with in a very satisfactory manner, and the whole report is well worthy of the careful attention of sanitarians.

MINOR PARAGRAPHS.

THE NEW YORK POST-GRADUATE HOSPITAL.

The annual report of this institution, for the year ending May 1, 1887, shows that 4,734 new patients were treated in the dispensary, and 172 in the wards, the latter number including 148 infants treated in the Babies' Ward. During the summer a large surgical ward for women was opened, and a new ward for the surgical diseases of men has been fitted up. The directors announce their purpose of adding a lying-in ward. The hospital is in need of more room, and it is properly urged that, as it is not and never can be self-supporting, it is a fit subject for the munificence of those who are sufficiently enlightened to appreciate the great value of such institutions to the advance of the medical art and consequently to the welfare of the community.

THE HENDON COW DISEASE.

IN connection with the outbreaks of a disease supposed to have some points in common with the scarlet fever of the human subject that have occurred at Hendon, in England, mention of which will be found in our account of the proceedings of the New York Academy of Medicine at its meeting of December 1, 1887, it is interesting to note the observations and conclusions set forth by Professor Crookshank, of the Bacteriological Laboratory of King's College, London, in a communication made to the Agricultural Department of the Privy Council, an abstract of which is published in the "Lancet" for December 17th. Professor Crookshank, acting under directions to investigate an outbreak in the light of Dr. Klein's previous observations, found a disease which he concluded was nothing else than cow-pox.

M. PÉAN.

A BANQUET was lately held in Paris in honor of M. Péan's nomination to the *Académie de médecine*. To judge from the accounts given in the "Bulletin médical" and the "Progrès médical," the occasion was notable for the attendance of a great array of distinguished men, including the ever youthful Ricord, now eighty-seven years old; also for the speech made by M. Lepage, who dwelt upon the fact that M. Péan was one of those hospital surgeons who were not afraid to give the *internes* opportunities to perform operations—a practice, he said, that was truly French and in marked contrast with the customs beyond the Rhine, where the policy was to keep the young men down, in the interest of various personages.

APHASIA AND LEFT-HANDEDNESS.

AN account of an interesting case of aphasia in a left-handed person has recently been published by Sir George Paget, the Regius professor of physic in the University of Cambridge, as our London correspondent informs us. The patient was a clergyman of great intellectual powers who had a transient attack of right hemiplegia with aphasia, recovery being complete in about thirty hours. Subsequently he had left hemiplegia, but no aphasia, and from the effects of this he ultimately died. As already stated, the patient was naturally left-handed and he used his left hand by preference in everything except writing, and he was in the habit of writing much. According to the ordinary rule he should have had aphasia with his left-sided paralysis, and not with his right; the reversal of this rule in his case may be assumed to be due to the fact that he wrote with his right hand, as it would be natural to suppose that the memory of words would go with the movements of the hand that wrote them.

ITEMS, ETC.

The New York Academy of Medicine.—At the annual meeting, held on the 5th inst., it was announced that the general permanent fund amounted to $117,731.61, of which $106,218.00 were available for the erection of a new building. This was in addition to the value of the building now occupied by the Academy. One hundred and eighty new members had been elected during the year. Dr. Andrew H. Smith was elected vice-president, and Dr. Gouverneur M. Smith a trustee.

A Legacy for M. Pasteur.—The "Union médicale" states that Mme. Boucicaut bequeathed 100,000 francs to M. Pasteur, and the remainder of her fortune, said to amount to 10,000,000 francs, for the building of a new hospital in Paris.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 10, 1888:

DISEASES.	Week ending Jan. 3.		Week ending Jan. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	5	4	10	5
Scarlet fever	136	17	164	27
Cerebro-spinal meningitis	2	0	2	2
Measles	25	9	48	3
Diphtheria	143	62	210	57
Small-pox	1	0	5	0

The Bellevue Hospital Training School for Nurses graduated its fifteenth class, consisting of twenty-four young ladies, on Tuesday evening of this week. Dr. Charles E. Simmons, of the Board of Commissioners of Public Charities and Correction, gave an address to the class.

American Adulterated Lard in Europe.—A deserved rebuke has been given by the New York Produce Exchange in an answer to a communication from the *Société commerciale, industrielle et maritime*, of Antwerp, complaining of the quality of the lard received from the United States. The answer sets forth that the complaint has reference to the so-called "refined lard," over which the Exchange has no supervision, and says of this article: "Much of it is known as a compound of various substances, mostly of a fatty or oily nature, of which the major part is generally natural lard, put up by manufacturing firms in this city and the Western packing points to meet a demand principally from abroad, because of its cheapness compared with natural lard. The West Indies, the Continent of Europe, and notably the city of Antwerp, are large purchasers of this manufactured article. It does not come under the supervision of the Exchange or control of the Lard Committee in any way, but is made to order by the manufacturer to suit the requirements of the purchaser as to quality and price, and, although as a rule it is branded 'Lard' in some of its various qualities, it is so branded either by understanding or requirement of the purchaser, with full knowledge that it is an adulterated article. The *Société commerciale, industrielle et maritime* is laboring under a misapprehension when it supposes that the manufacturers of this compound are committing a 'fraud' upon the purchasers. They simply fulfill the terms of sale, and, while this committee disapprove of and condemn the practice of the manufacturer in branding this product as genuine when it is spurious, and thereby countenancing possible fraud by others, yet it must be said in justice to the American manufacturer that, if fraud, as charged by the respected society, is practiced upon the consumer, it must be so practiced after the produce reaches its Continental destination. While this committee was making this investigation it came to its knowledge that 'refined lard,' so called, was purchased with full knowledge as to quality for a Continental market at fully 25 per cent. less than the price of natural lard of contract standard on the day the contract was consummated. This tells its own story, and illustrates that, as far as Antwerp is concerned, the remedy lies with her merchants. If they will purchase from our manufacturers a genuine and not a spurious article, at its fair market value, the consumers of lard in that or its dependent markets will have no further cause of complaint."

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy during the week ending December 31, 1887:*

BIDDLE, C., Passed Assistant Surgeon. Detached from the Marine Rendezvous, Philadelphia, and placed on waiting orders.

CLEBORNE, C. J., Medical Director. Detached as member of Medical Examining Board, December 31st, and ordered to Norfolk Naval Hospital, January 5, 1888.

BRADLEY, M., Medical Inspector. Detached from Naval Hospital, Norfolk, January 5, 1888, and placed on waiting orders.

CLARK, J. H., Medical Inspector. Detached from special duty at Portsmouth, N. H., and ordered as member of Examining Board at Washington.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the three weeks ending January 7, 1888:*

BEVAN, A. D., Passed Assistant Surgeon. Resignation accepted to take effect January 31, 1888, and leave of absence extended to that date. December 31, 1887.

BRATTON, W. D., Assistant Surgeon. Granted leave of absence for thirty days. December 30, 1887.

MURRAY, R. D., Surgeon. On being relieved at Ship Island, Miss., to proceed to Key West, Fla., and assume charge of the service. January 4, 1888.

DEVAN, S. C., Passed Assistant Surgeon. Relieved from duty at Port Townsend, W. T., to assume charge of Sapelo Quarantine. January 5, 1888.

GLENNAN, A. H., Passed Assistant Surgeon. Relieved from duty at Key West, Fla., to assume charge of the service at Port Townsend, W. T. January 5, 1888.

CARRINGTON, P. M., Assistant Surgeon. Promoted and appointed Passed Assistant Surgeon from January 20, 1888. January 7, 1888.

Society Meetings for the Coming Week:

MONDAY, *January 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *January 17th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Franklin (annual), Kings (annual), Otsego (semi-annual—Cooperstown), and Westchester, N. Y.; Ogdensburg, N. Y., Medical Association; Connecticut River Valley Medical Association (Bellows Falls, Vt.).

WEDNESDAY, *January 18th:* Alumni Association of the Woman's Hospital in the State of New York; Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society (clinico-pathological).

THURSDAY, *January 19th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *January 20th:* Chicago Gynæcological Society.

SATURDAY, *January 21st:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Obituaries.

Wesley M. Carpenter, M. D.—Last Saturday morning it was discovered that Dr. Carpenter had died suddenly during the preceding night, at the age of fifty. It was not generally suspected by his friends that his health was seriously affected, and it is said that he did not cease from his work for a single day. On Friday evening he went to bed early, on account of not feeling well, and was found dead in his bed the next day. Thus suddenly, without warning, a man whose powers had apparently not yet begun to wane, whose career of usefulness was at its height, was taken from among his fellows. The news of his death came as a personal grief, we venture to say, to all of his professional brethren who knew him, and they were many, not only in New York, where he had passed the later years of his life, but in almost every quarter of the country, for his duties had called upon him to attend many medical meetings in distant cities, and everybody whom he met on such occasions became his friend.

Dr. Carpenter was a graduate of the College of Physicians and Surgeons, of the class of 1863. Having obtained his medical degree, he entered upon the practice of his profession in a small town in the northern part of the State. After spending a few years there, he came to New York and undertook a laborious and most creditable literary career. He began by reporting lectures and the proceedings of medical meetings, and this work he kept up in a measure to the last. As a stenographer Dr. Carpenter was equaled by several medical men in the country, but not to our knowledge has any one ever approached him in the art of giving the substance of a speaker's remarks in plain and succinct language. It was his ability to do this that made him always a satisfactory reporter—one whose manuscript an editor could safely send to the composing-room unrevised. The same faculty led to his excellence also in purely editorial work, a great amount of which was done by him in his later years. In 1884 he became the editor of the "Quarterly Epitome of American Practical Medicine and Surgery." Referring to that event, we said, in our issue for April 12, 1884: "To the few who do not know Dr. Carpenter we have only to say that, if they will read the 'Epitome,' they will not be slow to discover that he knows the difference between an abstract and a clipping, and, furthermore, that he has the art of making unusually satisfactory abstracts. Add to this a wide knowledge of medicine and an exceptional conscientiousness, and we have the picture, both of Dr. Carpenter and of what the editor of such a journal should be."

When he undertook the management of that quarterly journal, Dr. Carpenter did not diminish his laborious work as a member of the staff of the "Medical Record," and he continued to contribute occasionally to our own columns. He had already written a most excellent book, "An Index of the Practice of Medicine," published in 1883. He also worked steadily in the pathological department of Bellevue Hospital, and taught in the Medical Department of the University of the City of New York, in which at the time of his death he was clinical professor of medicine.

He recognized that these manifold duties precluded his taking much part in private practice, and he forbore to seek for it. It was the general impression, indeed, that he was not in practice at all, but since his death it has become known that he did much in the capacity of a practitioner among the poor, to whom he gave his services freely and lovingly.

Dr. Carpenter was simple in his tastes, and led a very quiet life. He never made himself conspicuous, and he shrunk when conspicuousness was sought to be thrust upon him. But there was nothing of the recluse about him; he was hearty and genial in his manner, and sparkled with a quiet humor that made him a most attractive companion. On fitting occasions he showed a truly poetic fire, as was exemplified in a brief address in memory of the late Dr. Marion Sims which he delivered a few years ago before the Medical Society of the County of New York. Under all circumstances he acted the part of a pure-minded Christian man, and of no man could it more truthfully be said that all who knew him were fond of him. His obsequies were largely attended by his professional brethren, and it is seldom indeed that, beyond the immediate circle of his family, a man's death has been so much deplored. A good man has left us; it is to be hoped that our sense of bereavement may urge us to follow the example of his blameless life.

OBITUARY NOTES.

Samuel A. Raborg, M. D., of New York, died suddenly, on Wednesday, the 4th inst. The deceased was a graduate of the Medical Department of the University of Maryland, of the class of 1859. Although his death was sudden, he had for a number of months been so affected in health as to be obliged to discontinue his practice.

Letters to the Editor.

THE TREATMENT OF HÆMORRHOIDS BY DILATATION.

27 East Forty-sixth Street, *January 7, 1888.*

To the Editor of the New York Medical Journal:

Sir: In the "New York Medical Journal" of August 30, 1887, p. 128, is a communication under the head "Treatment of Anal Fissure and Hæmorrhoids by Gradual Dilatation, with a Report of Cases," by H. O. Walker, M. D., etc. In this communication Dr. Walker says: "Gradual dilatation is not spoken of, as far as I know, by any writer as a means of cure in these cases."

The testimony of Dr. Walker in favor of gradual dilatation in the treatment of anal fissure and hæmorrhoids is valuable, but this method is not of recent date, as one might infer from what Dr. Walker says, but was practiced in just such cases by eminent men many years ago, as I will now attempt to demonstrate. In my treatise on the "Hæmorrhoidal Disease," published by W. Wood & Co., New York, in 1884, p. 226, I make the following remarks under the head "Gradual Dilatation":

"The treatment of hæmorrhoids by the dilatation of the anus and anal canal, by means of bougies gradually increased in size, was practiced many years before instantaneous or forcible dilatation was thought of for the same purpose. The bougie, as an efficacious local remedy in the diseases of the canal and orifice of the anus, was employed a century ago in Italy. Palletta thus briefly alludes to its use: 'Ma piu direttamente opereranno i locali remedii introdotti nell' ano: tra quali trovai protamente efficace una candeletta di cera spalmata di burro impastato con molta polvere di galla di quercia.' ('Instituzione Chirurgiche di Monteggia,' parte terza, sezione seconda, p. 521, 8vo, Milano, 1805.)

"In our own country I find that compression and dilatation were successfully practiced for the cure of hæmorrhoids by a physician of the State of Maryland in 1804. ('The Medical Repository,' 2d Hexade, vol. i, p. 339, 8vo, New York, 1804.)

"Mr. Copeland, of London, previous to 1810, successfully employed dilatation of the anus and anal canal by means of bougies in the treatment of numerous cases of hæmorrhoids. He highly recommended the practice. ('Observations on the Principal Diseases of the Rectum and Anus,' p. 67. Second edition, 8vo, London, 1814.)

"Mr. Quain also speaks in high terms of the use of dilatation of the anal canal by means of bougies in certain cases of hæmorrhoids. ('The Diseases of the Rectum,' p. 18. Second edition, 12mo, New York, 1855.)

"I have for a number of years employed dilatation of the anus and anal canal by the use of bougies for the treatment of the incipient stage of the hæmorrhoidal disease with good results. If judiciously employed at an early stage, before organized tumors have formed, it may prove the means of destroying the morbid condition of the vessels and overcoming any undue contraction of the anal sphincters, and thus preventing the further progress of the disease. For this purpose, besides using the English bougies, I have employed as a bougie my rectal exploring sound of different sizes. The influence of the bougie in removing the morbid sensibility and in relaxing the rigidity of the sphincters, as well as facilitating the return of the blood from the turgid, congested, and varicose vessels, is often surprising, and, if torpor of the rectum and obstinate constipation obtain, which are not unusual in such cases, it soon induces a natural action of the bowels, an object so very desirable in such instances."

On page 228 I say: "The able and ingenious M. Récamier, of the Hôtel Dieu, of Paris, employed gradual dilatation of the anal sphincters and inferior portion of the rectum, by means of bougies gradually increased in size, in the treatment of anal fissure and hæmorrhoids. He reports a number of cases in which this treatment was followed by complete recovery. ('Revue médicale de Paris,' Janvier, 1838.) It is very evident from the observations of M. Récamier that he did not contemplate, by either gradual, instantaneous, or forcible dilatation of the anal sphincters, any rupture of the muscular fibers, or any laceration or tearing of the mucous membrane of the rectum, as some authors have attributed to him. M. Monod, when discussing the subject of the forcible dilatation of the anal sphincters in anal fissure, and after explaining what he considered the *modus operandi* of M. Récamier's process to be, says that 'in it there occurs no rent of the mucous membrane, nor rupture of the fibers of the sphincters, but simply a modification, or a sudden change in the nervous state of the muscles, from which a momentary paralysis results, followed by the return again to the normal state.' ('De la dilatation forcée comme moyen de traitement de la fissure de l'anus avec constriction du sphincter,' 8vo, Paris, 1849.)"

On page 233 I remark: "I do not believe that, after regular organized hæmorrhoidal tumors are established, either gradual or forcible dilatation of the anal sphincters alone will, in the majority of cases, remove them. M. Verneuil, the distinguished surgeon of Paris, was one of the ablest advocates for the treatment of hæmorrhoids by the forcible dilatation of the anus; but, in order to succeed, he was compelled in the largest number of cases to combine with it the galvano-caustic method. The proceeding of Verneuil in such cases comprises two processes; first, the anal dilatation; and, second, the interstitial cauterization of the tumors. According to the testimony of M. Lartisien, M. Verneuil for several years employed forcible dilatation of the anal sphincters, combined with the galvano-cautery in the treatment of hæmorrhoids. ('Du traitement chirurgicale des hémorrhoïdes, et de la cauterisation interstitielle en particulier.' Thèse de Paris, 1873.) M. Gosselin also employed forcible dilatation of the anal sphincters in the treatment of hæmorrhoids. The cases, however, in which he used it were, it seems, complicated with anal fissure; and it was doubtless more for the cure of the fissure than for the cure of the hæmorrhoids that he employed it. ('Leçons sur les hémorrhoïdes,' 8vo, Paris, 1866.)

"Hæmorrhoids and anal fissure are two affections which often coexist, and the theory of the French surgeons is that, when such is the case, forcible dilatation of the anal sphincters cures both diseases. I have shown, however, that their theory and their practice do not correspond."

In my treatise on "Anal Fissure," published twenty years ago by W. Wood & Co., in 1868, p. 115, I say: "When the fissure is accompanied by spasmodic contraction of one or both sphincters of the anus, the healing of the ulcer is more or less protracted in consequence of such constriction, which, although a mere symptom, is nevertheless a source of considerable mischief, as it occasions much additional pain by compressing the fissure and preventing the healing of it as rapidly as it would otherwise do. This spasmodic state of the sphincter ani muscles should therefore be overcome by treatment, in addition to and separate and distinct from that of the fissure itself; not, however, by recourse to section of the sphincter muscles, according to M. Boyer, but by the milder, safer, and equally certain method of distending them. The object of employing distension of the sphincters, by either the bougie, the fingers, or tents made of various materials, is not only to produce relaxation of the constricted muscles, but also, by the firm pressure, to render them less irritable and consequently less susceptible of the sympathetic impressions of the fissure which are in reality the cause of the spasmodic contraction. If the dilatation is carefully and gradually made, I have always found that the introduction of the bougie, excepting the first time, is attended with but little pain. Every time it is inserted the pain is less. The bougie should not be used when the patient is suffering; better wait several hours after stooling, or just before the evacuation, when all the parts are in a quiescent state. For the purpose of dilating the anus and anal canal, I use the English rectal bougies, commencing with a No. 3. The bougie must be passed through the contracted portion of the canal, and immediately withdrawn; but it should not be so large, neither should the force be so great, as to lacerate or rupture the mucous membrane or muscular fibers, this not being contemplated by the mild operation of gradual distension or dilatation. The gradual dilatation of the sphincters and inferior portion of the rectum, if judiciously performed, is speedily followed by great relief, and ultimately by complete recovery."

On page 135 of the same work I say: "In cases in which the sphincters are powerfully contracted the bougie must be laid aside and a different method adopted. In such severe cases the patient should always be first placed under profound anæsthesia, for the anal sphincters, in consequence of their functional activity in such cases, are, as a general rule, the last to relax or yield to the influence of anæsthetics. Instead of the thumbs, I then introduce into the anus the index finger of each hand, and forcibly dilate the contracted muscles, first antero-posteriorly and then laterally, at the same time taking care to preserve the integrity of the membranes."

William Bodenhamer.

Proceedings of Societies.

NEW YORK CLINICAL SOCIETY.

Meeting of December 23, 1887.

The President, Dr. Robert Abbe, in the Chair.

Multiple Neuritis following Diphtheria; Paralysis, Ataxia, and a Peculiar Deformity of the Neck.—Dr. L. Emmett Holt presented two children of the same family, illustrating diphtheria in some of its more unusual manifestations. The first patient was a little girl, two years old, who had been under observation about three weeks. When she was first seen, the deformity of the spine was such as at first to lead to the suspicion that she might be suffering from Pott's disease of the cervical region. There was a very marked kyphosis extending from the fourth cervical to the second dorsal vertebra, and a compensatory lordosis of the lower part of the spine. The chin rested against the sternum. [A photograph taken at the time was exhibited.] The usual rigidity was absent, yet the parts were quite tender upon handling, and the girl was said to have cried much recently with pains about the neck. There was a smooth, nodular, bony prominence felt in the pharynx. The child had fallen down stairs, striking her head, about two months before. The friend who brought the child could give no clear history of the development of the symptoms. At the next visit it was learned from the mother that the patient had had diphtheria in August, but had escaped without complications or nervous sequelæ. About the middle of October she had a second attack, having taken the disease from a brother. This was tedious but not severe, and convalescence was slow. Except a nasal noise, no nervous symptoms appeared until about December 1st, when she was no longer able to hold her head up; this condition developed quite rapidly and was accompanied by severe pains in the neck. The gait had become somewhat unsteady. There was discovered at this examination well-marked ataxia. It was with considerable difficulty that the patient's equilibrium was maintained in walking. The gait was like that of one intoxicated, the body swaying; and falls were frequent. The pupils were normal, and there was slight convergent strabismus; the nasal twang to the voice had disappeared; the head could be slightly raised from the chest with difficulty; its habitual position was with the chin resting against the sternum. The muscles of the neck were very weak, and mobility was free in every direction. Pott's disease was positively excluded. No ataxia and no paralysis in the arms were present. The bowels were constipated; the pulse was full and regular; the general health was excellent; the knee-jerk was completely lost. An electrical examination a few days later showed good responses to a weak faradaic current in the muscles of the upper extremities. In the lower extremities a much stronger current was required, and so much pain was caused that the examination was not altogether conclusive; nor were the galvanic tests satisfactory for the same reason. There was now very marked tenderness over the sciatic nerve and its main branches. The present condition of the child showed marked improvement. The head was held almost normally, and was still freely movable; the ataxia was scarcely perceptible, although there was some unsteadiness in the gait, from weakness apparently; the tenderness along the nerve-trunks was still acute, and the feet and legs seemed generally hyperæsthetic. The treatment had been with strychnine, first in combination with belladonna and afterward alone, in doses increased up to $\frac{1}{45}$ of a grain three times a day.

The second patient, a brother of the first one, five years old, also had diphtheria in October, the attack being one of moderate severity. Nasal voice was noticed soon after convalescence began, with an occasional regurgitation of fluids through the nose. A few weeks later convergent strabismus was observed, with dilatation of the pupils. He complained of "seeing double" occasionally. As these symptoms of the throat and eyes began to pass off, decided weakness in the lower extremities developed. This did not come on until the middle of December. There was now very marked paresis of the lower extremities; he walked fairly on the level for a short distance, but going up and down stairs without assistance was impossible. There was, as in the sister's case, marked tenderness along the sciatic nerve and its large branches. In the feet and legs there was no loss of tactile sensibility. There did, however, seem to be a diminished sensibility to pain, as a strong faradaic current could be comfortably borne upon the legs, while on the thighs and upper extremities it could not be tolerated. The knee and plantar reflexes were abolished. There were good responses to a mild faradaic current in the muscles of the arms, one a little stronger was required for the thighs, still a stronger one for the anterior tibial group, while the calf group only responded to a very strong current. To galvanism good responses were obtained in all the muscles, but a strong current was required for the calf groups. There was no essential difference between the anodal and cathodal closure contractions. The pulse was regular and the general health good. He was also taking strychnine in $\frac{1}{45}$-grain doses three times daily. It was worthy of note that during the two weeks he had been taking the medicine his lower extremities had grown steadily worse. The improvement in the throat and eye symptoms had been progressing quite rapidly before any treatment was begun.

Dr. V. P. Gibney said that when the little girl was brought to him she had an ataxic gait, and there was prominence of the dorsal spine, but not a sharp angle. It seemed to him that that amount of deformity occurring in so short a time could not be due to Pott's disease. The ataxic gait, of course, might arise from compressing myelitis, but the entire gait of the child was unlike that due to myelitis arising from pressure. The mother then told him that the child had had diphtheria, and it at once occurred to him that that was the origin of her trouble. The spine was quite flexible. The position of the head and some other symptoms favored the diagnosis of Pott's disease, but the ataxia and the brevity of the attack seemed to him to exclude that disease. When he saw Dr. Holt, two weeks later, and was told that the deformity persisted, he was somewhat doubtful, but subsequently, when he was told that the deformity had disappeared, his doubts ceased. He had not examined for the prominence in the pharynx. Indeed, it required some tact to feel such a prominence when it was present in children. When present a prominence might be due to position of the head in relation to the body. Regarding sensitiveness over the projecting portion of the spine, he had never regarded it as a very satisfactory feature in the examination for spinal disease. He could usually determine at once whether there was true torticollis or malposition of the head from Pott's disease by the fact that in the latter disease there was rigidity of the posterior cervical muscles. That condition was absent in this case. The speaker had seen several instances of ataxia following diphtheria.

Dr. Walter Mendelson thought ataxia was rather an uncommon symptom of the neuritis following diphtheria. Still, it was present in a number of cases, and it raised the question of diagnosis between locomotor ataxia and diphtheritic paralysis. But, since ataxia was not infrequent in peripheral neuritis from whatever cause, he was disposed to look upon it simply as one of the symptoms of general neuritis. Peripheral neuritis following diphtheria was rarely so extensive as in these two cases. As there were so many of the symptoms which were described as occurring in marked cases of peripheral neuritis, it was to be expected that ataxia would be among them.

Dr. A. A. Smith had always thought that tonics and time did more for diphtheritic paralysis than anything else. Like most practitioners, he used electricity and also strychnine, but it had always seemed to him that the effects of strychnine were general only, that it was a good tonic; and he had never been able to satisfy himself that electricity did any good whatever. At any rate, he knew that many patients had recovered without electricity. He had seen quite a number of cases of paralysis of various muscles following diphtheria, and he had become more skeptical regarding the effect of any special treatment. As a rule the patients got well, but, as in many other diseases, convalescence was perhaps hastened by appropriate treatment. At one time he had thought it possible that some functional change in the spinal cord, perhaps a faulty blood-supply, would account for some of the cases, but this idea had never been very satisfactory, and it seemed to him that the explanation on the basis of a peripheral neuritis was also not altogether satisfactory. He would like very much to know whether Dr. Holt had observed any specially good results from the use of strychnine in the treatment of these cases, or whether its action had only been that of a general tonic.

Dr. Holt replied that he had administered strychnine as Dr. Smith and physicans generally had done, but he was yet to be convinced that it possessed any specific value. He had seen a number of patients recover in about the usual time that had received no treatment whatever. Strychnine was of great value, no doubt, as a general tonic. As to the value of electricity, his own experience had not been sufficient with its use to justify an opinion. Dr. Thacher, of New Haven, had reported, two or three years since, a case in which galvanism had been used on the two arms alternately for a week at a time. It was invariably found that the arm receiving the electricity gained more rapidly than the one untreated, the strength being measured by the dynamometer. The alternation from week to week seemed to preclude the possibility of this being accidental.

The President asked Dr. Holt whether the loss of knee jerk was to be accounted for by the paralytic condition of the muscles, or by the peripheral neuritis.

Dr. Holt had always regarded it as a result of the nerve lesion. Bernhardt had recently made the statement that the knee jerk was lost after diphtheria in about half the cases. Angel Money had supported this opinion. The speaker was inclined, from some recent operations, to think this symptom much more frequent than was generally supposed.

Dr. W. H. Katzenbach thought that the use of electricity did not materially shorten the disease.

A Study of Medical Errors.—Dr. J. West Roosevelt read a paper with this title.

The President remarked that he would dislike to give up the use of local antiseptics applied to the throat in diphtheria as one of the small anchors in rather a hopeless disease, and be left drifting entirely.

Very Early Syphilitic Headache.—Dr. Curtis related a case of what was believed to be early syphilitic headache, although the history of syphilis was a little doubtful. The patient, aged about thirty-five, was infected by her husband with a sore, which was treated locally for two weeks in Charity Hospital, and she was there told that she had syphilis, but was given no medicine internally. The sore being cured, she left the hospital, and at about that time began to suffer from headache, for which a few days later she sought the speaker's advice. There was severe pain all over the scalp, but the forehead was not affected; there was marked tenderness on pressure. There was no eruption, there were no enlarged glands, and there were no symptoms except headache, which was so severe as to interfere with sleep. Syphilis was thought of as the cause, but the speaker had never seen a case in which the headache had occurred so early after the presumable initial lesion. Remedies for the correction of indigestion proved of no avail, the headache grew worse, and, after five or six days had been passed without sleep, she was given the "mixed treatment," with $\frac{1}{24}$ of a grain of bichloride of mercury and 4 grains of iodide of potassium three times a day. No effect following, about the fourth day the dose of the bichloride was doubled, and within two days more the headache and the tenderness over the scalp disappeared. She continued to take the medicine about a week, and then left it off two or three days, when the headache returned, and tenderness developed over the forehead and the bones of the face. There was closure of one eye from œdema, which lasted only a few hours. The headache was relieved by her resuming the use of bichloride of mercury. The speaker had still been in doubt regarding her having syphilis until about a week later, when characteristic syphilitic sore throat developed, a small sore appeared above the meatus urinarius, and two somewhat enlarged glands were found in the groin. The ulcer at the meatus had the appearance of a mucous patch. Infection was supposed to have taken place about six weeks before the appearance of the headache.

Addison's Disease in a Negro.—Dr. Thacher had discovered at an autopsy on a black negro what was presumably a case of Addison's disease. The suprarenal capsules were enlarged, which led him to examine the mucous membranes. The tongue showed quite distinct brown spots. The patient had died with some symptoms of slow heart failure. The heart was found enlarged and apparently weakened in structure. A few tubercular deposits were present in different parts of the body.

Fatal Pneumothorax caused by an Exploratory Puncture with the Hypodermic Needle.—Dr. H. M. Biggs had quite recently made an autopsy and found pneumothorax, due, he thought, to perforation with the hypodermic needle. The patient had entered the hospital with some pulmonary trouble. A physician introduced a hypodermic needle on each side for diagnostic purposes. The following morning the patient was found dead in his bed. The orderly knew nothing about how death had occurred. At the autopsy the speaker found the left lung to be the seat of extensive interstitial inflammation, with tubercular foci, and occupying certainly not more than half the space usually occupied by it. The heart was drawn considerably to the left. The right lung had collapsed, and lay against the spinal column and to the left of the median line. The chest cavity was full of air. The right lung was found to be very emphysematous, and when it was inflated under water a pinhole perforation was discovered at its lower border. Nothing of a pathological nature was found about the perforation, and there was nothing further abnormal in the lung except a few very small tubercular nodules. There was not the slightest trace of inflammation in either the parietal or the visceral pleura on the right side. The speaker thought the most reasonable explanation of the case was that collateral emphysema had taken place in the right lung, that a bleb had been accidentally punctured with the needle, that the perforation did not afterward close, that the left lung had been rendered almost useless by pneumonitis, and that consequently when pneumothorax rapidly developed the patient died. He asked whether any of the members had observed any unfavorable results from puncture with the hypodermic needle for diagnostic purposes. He knew of three or four cases in which very serious results had followed, and in one or two there had been death. In the case just related the patient was about forty years old.

Dr. Thacher had seen a similar case a few months before. A child had some infectious disease, some pulmonary symptoms developed, and, in order to settle the diagnosis between broncho-pneumonia and pleurisy, the hypodermic needle was inserted on both sides. Within two or three hours intense dyspnœa developed and the child soon died. The speaker made an autopsy. Both lungs were collapsed, and a puncture was found through the lower edge of both at the site where the physician said he had introduced the hypodermic needle. There was a slight amount of broncho-pneumonia. The speaker could account for the pneumothorax in no other way than on the supposition of puncture of the lungs by the hypodermic needle.

Dr. Mendelson thought the size of the needle might have something to do with the results of puncture, but Dr. Biggs and Dr. Thacher said that an ordinary hypodermic needle had been employed in the cases related by them.

The President asked Dr. Biggs if it was easy to determine whether the air had entered the chest cavity before or after death.

Dr. Biggs thought it was not difficult, certainly it had not been in the case he had related. Besides the marked compression of the lungs, one was emphysematous, and collapse was less marked in an emphysematous lung from opening the chest cavity after death.

Dr. Roosevelt thought there might be some difficulty in deciding whether a case of pneumothorax had not occurred post mortem if it had existed only a few hours before death. The lung might easily be ruptured inadvertently while one was inflating it.

Dr. Thacher said that the possibility of the post-mortem occurrence of the condition in his case had occurred to him, but he had never seen such marked post-mortem collapse of the lungs, and felt quite sure that that was not the explanation of the case.

Dr. Roosevelt referred to a case of general peritonitis following puncture with an aspirator needle. The puncture was made for empyema by a competent man, and the needle passed through the diaphragm, probably carrying with it pus from the chest cavity, and set up general peritonitis.

NEW YORK ACADEMY OF MEDICINE.

Meeting of December 1, 1887.

The President, Dr. A. Jacobi, in the Chair.

The Foot-and-Mouth Disease as it affects Man and Animals, and its Relation to Human Scarlet Fever as a Prophylactic.—Dr. John W. Stickler, of Orange, N. J., read a paper on this subject. He had endeavored for the past four years to develop a virus with which to inoculate children to give them immunity from scarlet fever, and a brief account of his labors was given in the paper. The symptoms of foot-and-mouth disease, as it appeared in man, varied somewhat according to whether its origin was in inoculation from the virus contained in the vesicles of the disease in the cow or in the drinking of milk from the affected animal. Some of the symptoms mentioned were sore throat, enlarged glands, and vesicles on the mucous membrane in the mouth. Sometimes the tongue became swollen to a considerable degree; in some instances there was an eruption on the hands and feet, and in others there was a scarlet eruption on the body. In the epidemic of sore throat which occurred at Dover, England, in 1884, it was shown that the milk which caused the sore throat came from cows which were affected with foot-and-mouth disease; the majority of these persons presented two prominent symptoms—namely, sore throat and enlargement of the lymphatic glands. The other symptoms, and the location of the eruption, ulcers, etc., varied. Through Dr. M. K. Robinson the author had learned that, of 183 persons affected during the epidemic, none had since had scarlet fever; and that members of eight families who had previously had scarlet fever escaped the epidemic, while others who had not previously had scarlet fever contracted it. Sixteen persons who were affected with the disease had had scarlet fever; of these sixteen, four had a mild form of the disease, and two of them had had their scarlet fever when they were young; it was doubtful whether six out of the remaining ten had really had scarlet fever. The author raised the question whether scarlet fever and the foot-and-mouth disease might not be for a time mutually protective. Believing that in the evidence furnished by the Dover epidemic there was an indication of what might be accomplished, he took virus from cows suffering from foot-and-mouth disease and inoculated three children, and subsequently exposed them to the contagion of scarlet fever. Detailed histories of these cases were given. In the first two cases the symptoms of foot-and-mouth disease developed, and the children were afterward thoroughly exposed in the presence of those who had scarlet fever, but failed to contract the disease. In the third case the symptoms of foot-and-mouth disease did not develop after inoculation, but three years afterward the child had not had scarlet fever, although exposed to it. It would thus appear that the virus of foot-and-mouth disease was protective against the contagium of scarlet fever, but the author was well aware that at this stage of the investigations no definite conclusions could be advanced.

The author referred to the experiments of Klein, who professed to have found the specific germ of foot-and-mouth disease, which by its general appearance could not be distinguished from that found in the cows whose milk had caused the epidemic of scarlet fever at Hendon, England. There were other reasons for believing that there was a great similarity between foot-and-mouth disease and bovine scarlet fever. For four years the author had been trying to demonstrate whether scarlet fever could be generated in the lower animals by inoculation with the virus of human scarlet fever, and whether the disease thus produced in the cow would furnish a virus protective against scarlet fever in man. Among the symptoms which appeared after inoculating colts were sore throat, redness of the mucous membrane of the mouth and nostrils, elevation of the temperature above 101° F., and desquamation of the cuticle. From his experiments on colts, cows, dogs, cats, etc., it seemed fair to infer that the disease which was developed in them by inoculation with the virus of human scarlet fever was specific scarlet fever. The disease appeared to be mild, but he was aware that it might be the opposite. Early in 1883 he inoculated twelve persons with virus obtained from horses supposed to have foot-and-mouth disease. Since then none of the twelve persons had developed scarlet fever, although they had mingled freely with those who had it. Of thirteen persons inoculated with the virus of foot-and-mouth disease in the cow, all of whom had had scarlet fever previously, five developed the disease, and eight escaped. During the last year he had inoculated two children with the virus of scarlet fever in the cow developed from scarlet fever in man. In one around the point of inoculation an erythematous blush developed, and a scab formed, surrounded by a red areola; there was considerable fever; a rash similar to that of scarlet fever appeared on the upper part of the chest and spread to the arms; the scab fell, and a few days later the child was well. In the second case the only result was an erythematous blush, which disappeared after two or three days; there was no systemic disturbance. He also inoculated two other children from the virus of the cow, and they had not since developed scarlet fever, although exposed. The supply of the virus of foot-and-mouth disease could easily be kept up in Europe, where the disease was common in cattle. In this country it could be readily obtained by inoculating cattle with the virus of human scarlet fever, which produced exactly the eruption which occurred at Hendon.

Dr. H. C. McLean, of Brooklyn, said the foot-and-mouth disease, or aphtha, occurred in cattle as an epizootic. One attack did not afford immunity in the bovine tribe, but it did in the ovine. The author had spoken of the temperature in cattle rising to 102° F. The normal temperature in cattle was from 101° to 102° F.

Dr. S. T. Hubbard had seen one of the children inoculated by Dr. Stickler, and the symptoms had been in every way like those of scarlet fever.

Professor Law, of Cornell University, had seen a good deal of foot-and-mouth disease in Europe. When it started in a herd of cattle nearly all of them became affected, as did also the herdsmen. Considering the prevalence of the disease in England, he thought that, if it afforded protection against scarlet fever, the latter disease should be less common there. But he believed scarlet fever was as prevalent and as fatal in England as in America, where foot-and-mouth disease was scarcely known. One attack of foot-and mouth disease afforded but a short protection against another in cattle. Perhaps it would be different in men. A further cause for skepticism on his part was the fact that he had many times been exposed to foot-and-mouth disease in cattle and had not contracted it, but he believed that on the first occasion he was exposed to scarlet fever he took that disease. He was not susceptible to the one, while he was to the other. He thought experimentation with the virus of foot-and-mouth disease might better be carried on across the Atlantic, where the disease was prevalent. If it should become prevalent in this country it would depreciate the value of our many thousands of cattle five or ten dollars a head. Regarding the prophylactic value of virus obtained from scarlet fever proper, if it were employed, would it not be likely to prove the means of spreading that disease? He was a great admirer of Pasteur, and he believed that he had done a great deal for the science of medicine, but he feared Pasteur had contributed largely to the spread of anthrax by sending out the virus for experimental purposes. It was also true that hydrophobia in dogs was never so common as since Pasteur's experiments were begun. The speaker doubted not that he protected the dogs on which he experimented, but he spread the disease in sending out the virus.

Dr. J. Lewis Smith thought one could not fail to be convinced, on reading the account of the epidemic at St. Mary's Home, England, that there might be a disease in the cow which when communicated to children would produce scarlet fever; but he had not found evidence in the history of that epidemic that the disease in children was mild; that, being contracted through disease in the cow, it had been modified in severity.

Dr. McLean, Jr., of Brooklyn, denied that the epidemic of scarlet fever at Hendon had been proved to have its origin in the disease of the cows from which the milk-supply was obtained. But, granting that the contagion came from the milk, might not the milk have been diluted with contaminated water, or the virus of scarlet fever found its way to the cans? He had seen milk-cans drying in rooms where persons lay sick with measles, scarlet fever, and diphtheria. With two exceptions, he believed foot-and-mouth disease had never prevailed in this country. He did not wish the medical profession to think that veterinarians regarded the outbreak of scarlet fever at Hendlen as due to the disease in cows which furnished the milk, or that scarlet fever ever occurred in cattle or horses.

Dr. J. C. Peters thought that certain veterinarians had described scarlet fever in cattle and horses.

Professor Law said that that was true, but the disease was non-contagious and in no way resembled the scarlet fever of man. The name was unfortunate.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of November 23, 1887.

(*Concluded from Vol. XLVI, page 750.*)

Pyosalpinx.—Dr. Penrose's paper being under discussion, Dr. J. Price said that the report afforded an excellent opportunity to discuss pelvic surgery. While he had been greatly interested in every case reported and knew the work to have been perfect from personal observation, he simply wished to speak of the present position of pelvic surgery, by whom, when, and where it should be done. 1. By whom? He would read a quotation from McDowell: "I think my description of the mode of operating, and of the anatomy of the parts concerned, clear enough to enable any good anatomist, possessing the judgment requisite for a surgeon, to operate with safety. I hope no operator of any other description may ever attempt it. It is my most ardent wish that this operation may remain to the mechanical surgeon for ever incomprehensible."

Dr. Penrose was a trained surgeon; the ovariotomist should be unsurpassed in surgical resource and ingenuity. Only skillful and trained hands should follow this calling. He should begin young. Many of the old-fashioned ovariotomists were dangerous; they vaccinated babies until they were forty-five or fifty years old, and then began the study and practice of surgery in the abdominal cavity. Sad and sorrowful had been the results; but such was not the condition of affairs at present. The mortality now was almost *nil* in young and experienced hands, and with patients that were able to move about. The results now were very much better, even in those far advanced in the process of dying. Again, in a class of cases that were considered too dangerous to touch—he alluded to all forms of pelvic inflammatory trouble—a class of cases presented this evening, affording examples of a state of professional ignorance and prejudice which was a disgrace alike to the enlightened time in which we lived and to the enormous advances made by the art and science of surgery, we were far indeed from seeing the full application of these advances for the relief of suffering women. This operation saved life and relieved great suffering, restoring the patient to health and a life of usefulness.

2. As to the time of operation. Grave inflammatory troubles should be dealt with as soon as discovered; delay and repeated examinations were dangerous. We dreaded the delay of a day in suppurative cases. In conclusion, he would allude briefly to McDowell's work, and this would cover "the where," by a quotation from Dr. R. S. Sutton: "In the light of all recent advances concerning the environs of an ovariotomy patient, I ask you to listen thoughtfully, and inquire of yourselves: Have modern operators had better environments than McDowell did? Is their quarantine better than his was? Whether accident or necessity or the simplicity of border life provided these conditions so favorable to recovery, your orator will not inquire, but hopes to show that McDowell did operate under conditions as favorable as does Dr. Keith or Mr. Lawson Tait. 1. The patient was refused operation in her own home. 2. She was operated on in Dr. McDowell's own house. 3. History mentions but one assistant present at the operation. 4. The patient had never been tapped. 5. We may safely infer that the room in which the operation was performed contained at this early date in Kentucky no superabundance of furniture or upholstery. 6. That the room was ventilated by an open fire-place is more than probable. 7. The atmosphere was that of a healthy border town. 8. No sponges were introduced into the abdomen. 9. He ligated the pedicle and dropped it in. This operation will stand the criticism of the most exacting specialist of the year 1885 save in two particulars—viz., the ligature was not carbolized or scalded, the ends of it were left hanging out of the lower angle of the wound, and merely turning the woman on the side to permit all fluid to escape from the cavity of the abdomen was scarcely enough in that direction. Pause a moment! Think; at the end of almost three quarters of a century the operation stands almost where McDowell left it, with one solitary exception—viz., the ends of the ligature surrounding the pedicle are cut short."

Dr. J. M. **Baldy** said that, in a recent number of the "Pittsburgh Medical Review," the editor, commenting upon a report of cases of abdominal section done at the Philadelphia Dispensary, had said: "The fact that the operations were performed at the patients' homes with success should do away with the old idea that the only place to do abdominal section is in a private hospital." The vast majority of the Philadelphia Dispensary operations had been done at the patients' homes under conditions and surroundings which had been anything but desirable. If the immediate surroundings of the patient and the wound were aseptic, the operation could be done with perfect safety anywhere. In many cases of pyosalpinx, if a wealthy woman refused to take the risk of the knife, she could by proper treatment be made comparatively comfortable without great risk of her life. However, the majority of cases of pyosalpinx, even among the wealthy, demanded surgical interference sooner or later. If, on the other hand, the patient had to work for her living, and was suffering with recurring attacks of peritonitis, he thought the operation was always called for. The risks of the operation were comparatively slight. It could be performed by any general surgeon if he had a cool head and good surgical resources.

The use of salines in the treatment of peritonitis was a point of extreme interest. From what he had seen of such cases there was no doubt in his own mind that the treatment by opium was a great mistake. Where there were the signs of beginning peritonitis, the use of large concentrated doses of salines rapidly relieved them. While the use of opium favored the occurrence of adhesions, salines would naturally tend to do away with trouble of that kind. Opium shut up all the avenues of escape for the products of inflammation, and thus tended to increase the trouble rather than to alleviate it.

Dr. J. **Price** had been surprised at what Dr. Baldy had said with reference to pyosalpinx when he realized how much trouble might come from a little pus. Patients with pyosalpinx were always in danger. They suffered constant pain, went down rapidly, and died.

Dr. J. C. **Da Costa** could not agree with Dr. Price with reference to pyosalpinx. Others, who had had a large experience, when asked with reference to their method of treating this affection, also differed with him. One gentleman with a large experience in the removal of ovarian tumors had told the speaker that he had seen many cases of pyosalpinx, but that the patients had all recovered without operation. His experience was much the same. Dr. Price had said that it was never safe to allow the pus to remain. The speaker would state two cases. A lady had been suffering for fifteen years. The left Fallopian tube was as large as a small Bologna sausage. She was given the ordinary local and general treatment. One day a little bleb appeared on one side of the uterus. This was opened, and, on introducing the sound, it entered five inches and a quarter. During the next few hours a large quantity of pus was discharged. This patient finally made a complete recovery. Another case was that of a young married lady, suffering with salpingitis, who had come under his care. The ovary was quite large. Ordinary common-sense treatment, with rest in bed, caused great improvement. She began to go about too soon, and had a return of the trouble. At that time the ovary was as large as an orange, but in two months she had perfectly recovered. Would he in this case have been justified in removing the ovaries and thus destroying her hope of ever performing the duties which the Almighty had sent her into the world to perform?

In regard to the reports of patients cured by operation that were heard of, the question came up as to their reliability. The speaker granted that there was not the same mortality after abdominal section for salpingitis and other such troubles as after ovariotomy, but, even if there was a mortality of no more than one per cent., the question arose, Was it proper to perform this operation when the patient could be relieved by ordinary treatment? There were in Philadelphia a number of hospitals that would take these patients and treat them and cure them, so poverty could not be urged as a pretext. He believed that the gentlemen who made reports of their cases believed that the reports were correct at the time they made them. But he had had the opportunity of seeing a number of these patients some time after the operation had been performed, and the later part of the history had not agreed with the published report. He would mention two such cases in illustration. One patient was operated upon seven or eight years ago, and was reported cured. She was still a nervous, hysterical woman, who could not sleep without an anodyne, and had a voice like a poll-parrot. In the second case the operation was done several years ago and reported as successful, but the patient had been wretched and miserable until a year ago, when she fell into the hands of a quack who cured her. Why did the reports and the results differ so? The women went to the surgeon in hope of relief, were told "the operation would cure them," believed it, were operated on, and, under the stimulus of hope, felt as if they were cured, and that the pains they still felt were due to the operation and would pass away, and so were reported cured. After a while the old pains came back and they realized that they were not yet well, spite of the operation and published cure. In a number of other cases of women reported well after the operation, the least of their troubles had been ventral hernia. In opening the abdomen, the operator was very apt to find what he was hunting for, and the speaker had seen ovaries extirpated which were not diseased enough to demand it. It was not necessary always to remove both ovaries, as was often done in operating for ovarian tumors. He had left a second ovary as large as a lemon, and had had no bad results, as in a case operated on about two years ago. The woman had menstruated regularly since the operation and had had no trouble. The ovary had diminished decidedly in size.

Dr. M. Price would challenge some of the statements made by Dr. Da Costa. He had said that salpingitis did not cause much trouble. The speaker could show him a case which had been under medical treatment for five years. Two years ago an abscess burrowed down through the cellular tissue and discharged between the bowel and the vagina. This patient had been operated on five different times for fistula in ano, with entire removal of the recto-vaginal septum by operations, and until four weeks ago it had not been suspected that hers was a case of pyosalpinx. These patients could not be cured by simple medical treatment. There was no single patient that he had seen operated on who had stood one chance in fifty of living six months if the operation was not done.

Dr. W. H. Parish had no doubt that those who advocated this operation would agree that not all cases of disease of the appendages demanded operation. August Martin had said that three fourths of the cases of disease of the tubes and ovaries did not require operation. There were also cases of gonorrhœal affections of the tube which did not demand it. The speaker had seen one case where the inflammation of the tubes followed the occurrence of gonorrhœal inflammation of the vagina, and in which the trouble subsided; the woman subsequently became pregnant. With reference to the removal of ovaries and tubes that contained pus, we all knew that these cases might continue for years, but the patient would suffer from repeated exacerbations of inflammation. They were always in danger from the thinning of the tubal or ovarian wall, the escape of pus, and the occurrence of general peritonitis. If we looked over the records of any hospital or board of health, he thought that we should now find few deaths, compared with the past, recorded as due to pelvic abscess and general peritonitis. He thought that many cases of pelvic abscess and of general peritonitis had been in their origin cases of pyosalpinx. He was strongly in favor of the removal of the tubes and ovaries where there was pus. While a patient might enjoy a certain amount of comfort with pus in the tubes, yet she would be liable to frequent exacerbations, and might have her life placed in great danger at any moment. He was sure that the operation for the removal of the tubes and ovaries in pyosalpinx or ovarian abscess had "come to stay," no matter what the future position of the operation for other conditions might be. He thought that those who urged the treatment of these cases without operation were doing great injustice to a considerable number of patients, and also no little injustice to the surgery of to-day. His own experience with the operation warranted his indorsement of it.

Dr. Penrose had only to say, in conclusion, that such tubes as he had shown were useless and dangerous to the woman. They could not permit the passage of spermatozoa or ova. He could not agree with Dr. Da Costa's statement about abscess of the lung or brain. He thought it proper to open an abscess wherever it occurred, and not to trust to nature; and, when possible, to make a complete removal not only of the pus but of the abscess-walls, as was done in pyosalpinx. In cases of pyosalpinx said to have been cured by medical treatment there was always an element of doubt with regard to the diagnosis. Such cases might sometimes occur. But there were few physicians skillful enough to make a positive diagnosis of pyosalpinx before the abdomen was opened. In all the cases in which he had operated the patients had had several months' or years' treatment in the hospitals before the operation was performed.

Book Notices.

Trattato della difteria. Per il Cav. Dott. Vincenzo Cozzolino, Prof. pareg. della R. Università di Napoli, etc. 1° Volume. Statistica.—Biologia del virus difterico.—Batteriologia.—Igiene.—Storia epidemiologica dell' epidemia difterica di Reggio-Calabria nel 1884. (Guida per il pratico a letto del difterico.) Napoli: Stabilimento Tipografico dei Classici Italiani, 1887. Pp. xxvii–380.

This is rather a summary of the present unsatisfactory state of our knowledge concerning diphtheria than an exposition of any new facts or original views in relation thereto, save in so far as the author seems inclined to accept "antimicrobicism" as a complete definition and comprehensive boundary of hygiene, notwithstanding the discrepancy of bacteriological opinion (which he fully sets forth) regarding a specific micro-organic ferment in the malady under consideration. To his compatriot, Dr. Tigri, he awards priority in demonstrating, in 1867, the specific causation of diphtheria by a "crittogama ramosa" which he christened "*Alga difteritica gutturale.*" Then follow descriptions of Letzerich's "*Zygodesmus*" or "*Tilletia diphtheritica*"; Cohn's *Micrococcus;* Talamon's mycelial growth; the theory of Wood and Formad, of the acquisition of active properties by inert micrococci; the latest conclusion of Klebs, that there are two distinct forms of diphtheria, one microsporine, the other bacillar; Loeffler's researches, tending to a similar result; the contradictory observations of Babes; Emmerich's cultivation experiments with the alleged bacillus of diphtheria in fowls and human subjects; Rutschorius's assertion that the disease is caused by the bacteria of putrefaction in a filth-polluted soil; and the investigations of many other writers, whose names are generally misspelled as only an Italian could misspell them. The pathological histology of diphtheria is well delineated, with its distinction from other exudative anginas of non-specific character. The directions for isolation and disinfection are clear and precise, though containing nothing new to readers of English medical literature.

Gerhardt's Handbuch der Kinderkrankheiten. Nachtrag ii. Die psychischen Störungen im Kindesalter. Von Dr. H. Emminghaus, Professor und Vorstand der psychiatrischen Klinik in Freiburg i. B. Tübingen: H. Laupp, 1887. Pp. viii–293.

This is the first systematic treatise devoted to the psychoses of childhood, if we may except the works of Ireland and the elder Seguin, which are confined to idiocy and amental conditions. Beginning with general symptomatology, which occupies nearly a hundred pages, the author proceeds to discuss a very great number of acute and chronic mental disorders, among which is paranoia, which is exceedingly rare in early life. The article on acute dementia is most excellent, and those who are familiar with Crichton Browne's case and with his article on the same subject in the "West Riding Reports" will read this author's contribution with interest. The chapter on hysteria in early life is most valuable, not only to the specialist, but to the general physician. In fact, this is one of those works which are of interest to all, and it will make the mental symptoms of ordinary disease in infancy much clearer than they now are.

Miscellany.

SOUTHERN NOTES.

By W. E. B. Davis, M. D., Birmingham, Ala.

The Alabama Medical Association.—The profession of Alabama is doubtless the most thoroughly organized of any in this country. No other association so completely represents the profession of its State. This approximates a military standard in its organization and discipline. Here the profession is so united that the members can do most effectual work for the protection of the people and their own elevation. They work in harmony, and thus they wield great influence over all classes of society. By united and concerted action they have been enabled to bring about the enactment of the necessary laws to carry out their purposes, and to the association is intrusted the administration of the law to regulate the practice of medicine and the health laws of the State. The constitution of the association was adopted sixteen years ago, and amendments have been made from time to time as emergencies arose, but the body of the work has not been interfered with. Under this constitution the association is in many respects peculiar. Its membership consists of a college of councilors and delegates from the chartered county societies. Each county is allowed two delegates. The college of councilors consists of three classes: junior councilors, those who have served less than five years; senior councilors, those who have served not less than five nor more than fifteen years; and grand senior councilors, those who have served more than fifteen years. The number of councilors is limited to one hundred, and if any member fails to attend the meetings of the association or pay his annual dues, he is promptly dropped from the roll and another elected. The annual dues of the councilors are $10 each, and the delegate fees $5. In addition to a president, two vice-presidents, secretary, and treasurer, the association has a board of censors, consisting of ten members elected from the grand senior councilors, and this board is the executive committee of the association. The senior censor is the health officer of the State, and the board of censors acts for the association during the interval between meetings. As stated, the association has charge of the sanitary affairs of the State and the administration of the law governing the admission of physicians to practice. These are intrusted to the board of censors as the committee of the association which reports to the association for final action. This board becomes a State board of health and the State board of medical examiners. The county societies receive charters from the State association, and their members are *ipso facto* members of the State organization. Each county society has a president, vice-president, secretary, and treasurer, and a board of censors, which is the county board of health and the county board of medical examiners. This board elects a health officer, who receives a salary from the county. The health officer performs the ordinary duties of this office, collecting vital statistics, etc., and taking the necessary precautions in cases of contagious or infectious diseases. His reports are supervised by the State board, as also are the medical examinations of the county boards. Only graduates of regular medical colleges, however, are allowed to apply to the county boards. Those without diplomas must apply to the State board for certificates to practice. The county boards are to the counties what the State board is to the entire State, except that there is not so much power vested in them.

All applicants for examination who propose to practice in the State are examined in the following departments, namely: 1. Inorganic and organic chemistry. 2. Human anatomy. 3. Human physiology. 4. Natural history and diagnosis of diseases. 5. Physical diagnosis. 6. Principles of surgery and operative surgery. 7. Mechanism of labor. 8. Obstetric operations. 9. Public and private hygiene. 10. Medical jurisprudence. The minimum requirement for a certificate is 75 per cent. There is great inequality in the examinations, as the county boards differ very greatly in their attainments and ability to make the examinations. To remedy this defect and furnish more uniform requirements for the entire State it has been urged that the State board make all examinations, the county boards still retaining their functions as boards of health. This law is objected to by the State board on the ground that it will interfere with the compactness of the organization. While much has been accomplished by the present law regulating the admission of members to the profession, it falls very far short of meeting the necessities for a higher standard of medical education, and will in all probability be altered at no distant time. There are sixty-two county societies holding charters from the State association, with an aggregate membership of between nine hundred and a thousand members. Only four counties in the State have no organized societies. This work has been perfected since 1872, and is the result of the labors of that genius and indefatigable worker, Dr. Jerome Cochrane, who is at present senior councilor of Alabama and doing much to sustain the organization which he has established, and to whom nearly all the honor is due for this almost perfect system. Of course his success has been augmented by the support of the united profession, whose representative members have willingly followed their distinguished leader.

The Alabama Surgical and Gynæcological Association.—*Continuous Irrigation as a Means of arresting Septic Infection in Abdominal and Uterine Surgery, with Report of Cases.*—Dr. William D. Haggard, of Nashville, Tenn., read a paper full of practical suggestions on this subject at the second annual meeting. The paper illustrated the great benefit to be derived from continuous irrigation when there was septic decomposition going on in the uterus or abdominal cavity. In Case I a fibroid tumor was partially removed by crucial incision and enucleation with the fingers. A large part of the tumor could not be removed and was left to be thrown off by Nature. The patient lost but little blood and did well till the third day, when contractile efforts of the uterus became severe. Examination revealed a mass of fœtid disintegrating tissue as large as an orange, the remainder of the fibroid; this was removed. The patient had a chill during the day, and on the evening of the third day a temperature of 105° F. and a pulse of 145. The entire cavity of the uterus seemed a mass of disintegrating tissue. The evidences of pyæmia were unmistakable, and with further absorption must have proved fatal. Continual douches of carbolized water on the second day had had no effect, and were found to have but little effect at this time. Dr. Haggard adopted continuous irrigation at a temperature of 105°, such as he had used in external wounds, and there was prompt amelioration of the grave symptoms. The irrigation was kept up for seven days, by which time the patient was convalescent. Dr. Haggard said he would have done Battey's operation, but it was not known at that time.

Case II. *Diffused Sarcoma of the Broad Ligament.*—An exploratory incision four inches in length was made in the linea alba, midway between the umbilicus and the symphysis pubis. The omentum was so much thickened and altered in appearance as to render it unrecognizable. Cutting through this, Dr. Haggard found the tumor, which presented a dark, dirty-reddish hue. The tumor had adhered to everything in contact with it. He was able to separate it from its adhesions as far as he could reach with his fingers, and hence thought he could remove the growth in its entirety and enlarged the abdominal incision for that purpose. Passing his hand in on the left side, he readily detached the tumor from its adhesions until he came down to the brim of the pelvis, which was so completely filled with the growth that he could not separate it from the adhesions. He passed his hand in on the right side, from which he was endeavoring to separate the tumor, when near the spinal column he came in contact with a soft, boggy, friable portion of the cyst-wall, which accidentally ruptured, giving exit to a large quantity of colloid matter, pus, and lymph, which, mixed with blood, was welling up in great profusion. As the adhesions of the tumor were so firm and the tumor was so soft and friable and easily torn, a complete removal was well-nigh impossible. The contents of the cyst having been removed, nothing remained but the torn, fragile cyst-wall, which at some points seemed so rotten as to be easily torn asunder. He tore away all of the cyst-wall that was possible, but left an unseemly mass of the cyst in the abdomen, and all of it in the pelvic cavity. The shock from the operation, augmented as it was by the profuse hæmorrhage, was now most profound. The abdomen was washed out with water as hot as the hand could bear it to stop the hæmorrhage and relieve shock. Dr. Haggard thought collapse was due to a collection of the blood in the abdominal vessels, and thought the use of hot water the best method of relieving it, as it contracted the vessels of the abdomen and forced the blood in the peripheral vessels. After the hæmorrhage was stopped the wound was closed and a glass drainage-tube left in the lower angle of the wound, which extended into the cavity of the cyst. The patient was rallied from her almost hopeless condition of shock by the hot water poured into her abdomen.

On the third day symptoms of septic absorption were unmistakable. The pulse in the evening ran up to 150, the temperature was 105°, the countenance was expressive of much discomfort, and the features were pinched, with a cadaveric hue of the skin. He adopted continuous irrigation as the best means available for averting further absorption of putrid matter. He brought into requisition a four-gallon bucket, with a small nozzle near the bottom, over which was placed a piece of rubber tubing with a long nozzle at the other extremity. A continuous stream of warm water was carried into the abdominal cavity. Soon after the flow of warm water was commenced there was great improvement in all the symptoms. The irrigation was kept up for twelve days. As the discharged water became clearer and free of blood-clots, etc., the irrigation was used less continuously. Dr. Haggard thought his patient would surely have died but for this constant washing away of decomposed and septic material.

The Southern Surgical and Gynæcological Association.—At the time this association was organized the Executive Committee of the Congress of American Physicians and Surgeons had not announced the time for the annual meetings of the Congress, and it was decided that the next annual meeting of the Southern Association would be held in Birmingham, beginning on the second Tuesday of September, 1888, and, as the Congress will meet in Washington on the third Tuesday of the same month, some of the members of the Southern Association will find great difficulty in attending both meetings. This was unfortunate, but, as both meetings were held in October, and as the committee for the Congress held its meeting only a few days before that of the organization of the Southern Association, the accident is easily explained. Many of the members of the Southern Association are already insisting that the time of the next meeting of the association be changed. It is impossible as yet to predict what will be the decision of the officers. A large number of its members belong to the Congress, and, if the time is not changed before the next meeting, at that session it will receive due consideration, and a time he selected which will not conflict with the Congress, and which will meet the convenience of the majority of its members. It is not absolutely necessary, however, to have a change in the time for the next session in order for the members to attend both meetings, as the Southern Association will meet the week prior to that in which the Congress meets. The leading men of the whole South have expressed great interest in the new organization, and promised their support and co-operation in whatever would forward its interests, and it is to be regretted that this obstacle confronts them and the association at the very outset. There is no doubt that everything will be done to meet the convenience of the Southern members of the Congress, and this will only prove a small bubble, which will disappear, leaving no traces whatever. Should the time for the next meeting be changed, many of the members have expressed themselves in favor of June. As no societies, either State or national, meet at that time, it would probably meet with universal approval. The association has grown in strength every day since its organization. Its doors are open to known workers in surgery or gynæcology, and membership can only be had by one's record, which must be passed upon by the judicial council, composed of such men as Dr. John T. Cain, Dr. Hunter McGuire, Dr. J. M. Taylor, Dr. De Saussure Ford, and Dr. R. A. Kinloch. These gentlemen are well known to the profession, and will be recognized as a very reliable guard for the protection of an organization of scientific men associated together for professional improvement and the mutual benefit of its members. It is the purpose of the association to be so organized that every member can carry into his discussions the weight of his own experience and authority, to be an organization where its members can come each year knowing that they will be benefited and with the well-founded hope that they will find something to learn. With the co-operation of the leading surgeons and gynæcologists of the South—whence have come those with but few, if any, superiors in the annals of surgery or gynæcology, and where their equals still reside—the success of the association is a foregone conclusion, and its organization can not fail to mark an epoch in the history of American surgery and gynæcology.

The Texas State Medical Association.—At the next meeting of the association, according to "Daniel's Medical Journal," there will be presented for consideration a new constitution and by-laws. The subject has been made the special order for the first day of the session. Under the present working one representative only from each county votes, whether there be in that county one physician or one hundred, and that delegate has a voice in the election of all officers. Hence the minority virtually rules in all elections. It is urged that the association should have a place of permanent abode and of annual meeting, for many good reasons. Should the association change its plan of meeting at a different place each year, Austin will doubtless be selected for its permanent home, and a State medical library will in all probability be established.

The Medical Colleges of Louisville, Nashville, Atlanta, New Orleans, and, in fact, all the medical institutions of the South, are unusually well patronized this year, and in a very few months hundreds of new-made doctors will be ransacking the country for suitable locations.

The Question of Higher Medical Education is receiving consideration by many of the State medical organizations of the South, and it is earnestly desired that at no very distant time this section will be able to protect itself against so many incompetents and quacks, and will receive only those indorsed by competent State medical examining boards.

Dr. Thomas F. Wood, editor of the "North Carolina Medical Journal," is again able to walk after a year's confinement to his bed, to favor the removal of an aneurysm, from which he suffered, caused by overexertion in a botanic excursion in the mountains of North Carolina.

Dr. James E. Reeves, of Wheeling, W. Va., has decided to remove to Chattanooga, Tenn., where he will devote himself to the treatment of renal and pulmonary diseases, in which classes of maladies his extensive knowledge of pathology, bacteriology, and microscopical anatomy must prove an inestimable advantage.

Dr. William H. Anderson, who died in Mobile on the 14th of November, was for a long time professor in the Mobile Medical College and dean of the Faculty.

Dr. W. D. Haggard, president of the Southern Surgical and Gynæcological Association, is untiring in his efforts for the success of the association. Dr. Haggard is a man of great ability, and the association could not have elected one more suitable for its highest office.

The "Journal of Nervous and Mental Disease."—In the number of this excellent journal for November and December, 1887, completing the fourteenth volume, the editor, Dr. B. Sachs, announces his retirement from the editorial management, and expresses kind wishes for his successor, Dr. Græme M. Hammond. Dr. Sachs may well be satisfied with the career of the journal while it was in his hands, and we feel confident that Dr. Hammond also will prove an excellent editor.

A Simple Classification of Insanity.—The late Dr. John P. Gray ("Med. Record") gave the following: *Mania*, manifested by delusions of excitement, expansive ideas, exaggerations, self-consequence, incoherence, etc. *Melancholia*, manifested by delusions of depressing character, painful ideas, and apprehensions. *Dementia*, representing conditions of mental failure and feebleness of mental action. All cases of insanity come under these three heads. Cases may be acute, subacute, chronic, periodic, paroxysmal, but they are mania, melancholia, or dementia.

The Alumni Association of the Woman's Hospital in the State of New York will hold its third annual meeting at the New York Academy of Medicine on Wednesday, the 18th inst. The programme is as follows: *Morning session*, 10 to 1.—"Clinical Notes on Uterine Displacements," by Dr. G. A. Kletzsch; "A Study of the Ætiology of Prolapsus Vaginæ et Uteri," by Dr. G. T. Harrison; "Septic Peritonitis following Laparotomy," by Dr. P. F. Chambers; and "On the Ætiology and Development of Caruncle," by Dr. J. G. Perry. *Afternoon session* 3 to 5.—"The Electrical Treatment of Fibro-myomata," by Dr. A. H. Buckmaster; "The Use of Galvanism in Gynæcology," by Dr. E. L'H. McGinnis; and "The Use of the Tampon in the Treatment of Pelvic Inflammation," by Dr. T. A. Emmet (the discussion to be opened by Dr. W. G. Wylie and Dr. J. B. Hunter).

A Journal of Spiritualism.—We have received a circular from Signor Giovanni Succi, of Florence, announcing the appearance this month of the first number of "Il corriere spiritico," a thirty-two-page monthly scientific review of spiritualism. Signor Succi promises that all the assertions made in the "Corriere" shall be substantiated by material facts of a convincing nature.

The Northwestern Medical and Surgical Society has elected officers for the year 1888 as follows: President, Dr. R. C. M. Page; vice-president, Dr. A. M. Jacobus; secretary, Dr. Edward S. Peck.

The Health of Michigan.—According to the summary prepared by, the secretary of the State Board of Health, Dr. Henry B. Baker, for the four weeks ending December 31, 1887, diphtheria was reported from thirty-eight places, scarlet fever from thirty, typhoid fever from twenty, and measles from eighteen.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending January 6th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending December 17th corresponded to an annual rate of 22·1 in a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 16·8, and the highest in Blackburn and Preston, viz., 35·7 in a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, and 1 in Preston.

London.—One thousand six hundred and twenty-two deaths were registered during the week ending December 17th, including 17 from measles, 38 from scarlet fever, 23 from diphtheria, 106 from whooping-cough, 18 from enteric fever, and 12 from diarrhœa and dysentery. There were 413 deaths from diseases of the respiratory organs. Different forms of violence caused 53 deaths, and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 20·1 in a thousand. In greater London 2,057 deaths were registered, corresponding to an annual rate of 19·8 in a thousand of the population. In the "outer ring" 9 deaths from diphtheria, 18 from measles, 10 from scarlet fever, and 20 from whooping-cough were registered.

Ireland.—The average annual death rate represented by the deaths registered during the week ending December 17th in the sixteen principal town districts of Ireland was 33·1 in a thousand of the population. The lowest rate was recorded in Newry, viz., 14, and the highest in Kilkenny, viz., 42·3 in a thousand.

Dublin.—Two hundred and sixty-two deaths were registered during the week ending December 17th, including 5 from measles, 3 from whooping-cough, 12 from scarlet fever, 1 from typhus, 1 from enteric fever, and 2 from diarrhœa. Diseases of the respiratory organs caused 93 deaths. Three accidental deaths were registered, and in 37 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 37·7 in a thousand.

Scotland.—The deaths registered in eight principal towns during the week ending December 17th corresponded to an annual rate of 23 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 16·4, and the highest in Paisley, viz., 35 in a thousand. The aggregate number of deaths registered from all causes was 574, including 15 from measles, 9 from scarlet fever, 7 from diphtheria, 26 from whooping-cough, 9 from fever, and 9 from diarrhœa.

Germany.—The deaths registered in fifty-three cities of Germany, having an aggregate population of 6,831,222, during the week ending December 20th corresponded to an annual rate of 20·6 in a thousand. The lowest rate was recorded in Cassel, viz., 9·5, and the highest in Münster, viz., 38.

Athens.—The United States consul, in his dispatch dated December 10, 1887, says: "I am informed by the Greek Government that the quarantine restrictions on arrivals from Malta, Messina in Sicily, and from the coasts of the Italian peninsula between Gaëta and Cotrone have been discontinued. Intercourse is now free with all ports and countries."

Callao.—The United States consul, in his dispatch dated November 28, 1887, states that "on the 26th instant a cable message was received by the government at Lima from the Peruvian consul at Valparaiso, announcing that several cases of cholera had appeared at that port. A decree was then issued by the President ordering that all Peruvian ports be closed to vessels proceeding from those of Chili, with the exception of such shipping touching only at Punta Arenas (Sandy Point) in the Straits of Magellan; and this ordinance is to be held in force until the construction of the lazaretto on the island of San Lorenzo, in this bay, be concluded, and it is possible to establish a strict quarantine in accordance with proper sanitary observances. The work on the azaretto is being actively pushed under the supervision of the board of health."

Santiago de Cuba.—The United States consul reports, under date of December 24, 1887, that there are no new cases of small-pox, and yellow fever is declining at the military hospital. The harbor is completely free from contagious diseases.

Montevideo.—There were 377 deaths registered during the month of October, 1887, including 30 from small-pox and 5 from fevers.

Havana.—The sanitary inspector reports for the week ending December 24, 1887, 3 deaths from yellow fever and 77 from small-pox.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	December 17.	2,280,045	954	..	....	5	....	49	6	33
Glasgow	December 17	545,678	251	..	....	....	....	....	4	3
Warsaw	December 10.	439,174	193	..	....	12	....	....	7	7
Calcutta	November 19.	433,219	249	11	....	....	....	....	....	....
Amsterdam	December 17.	378,686	163	..	....	...	....	....	....	4
Rome	November 19.	373,356	173	..	....	5	...	3	2	1
Rome	November 26.	373,356	153	..	....	3	....	2	....	3
Copenhagen	December 6.	290,000	134	..	....	....	...	....	8	9
Munich	December 3.	269,000	126	..	....	...	....	3	2	4
Edinburgh	December 17.	258,629	100	..	....	....	2	....	2	2
Palermo	December 18.	250,000	141	..	....	....	....	....	4	13
Belfast	December 10.	224,122	136	..	....	....	....	3	3	....
Belfast	December 17.	224,122	160	..	....	....	....	3	2	2
Genoa	December 17.	179,534	100	..	....	5	...	....	....	1
Leipsic	December 17.	170,000	64	..	....	....	....	....	3	4
Martinique	December 17.	165,000	......	..	....	20	....	....	....	....
Trieste	December 10.	150,157	80	..	....	10	....	1	....	2
Bremen	December 10.	119,000	56	..	..	....	....	....	2	....
Havre	December 18.	112,074	62	..	....	....	....	3	....	....
Leith	December 17.	72,297	23	..	....	...	....	1	....	....
Mayence	December 3.	65,701	20	..	....	....	...	....	1	1
Mayence	December 10.	65,701	20	..	....	....	....	....	....	1
Cienfuegos	December 19.	35,164	34	..	....	24	....	....	....	....
Gibraltar	December 11.	23,621	9	..	....	1	....	....	....	....

Hammond on Diseases of the Nervous System.—Dr. William A. Hammond's "Diseases of the Nervous System" has made its appearance in Spanish and in Italian almost simultaneously. The Spanish translation is by Dr. Federico Toledo y Cueva, and the Italian by Dr. A. Rubino.

THERAPEUTICAL NOTES.

Antipyrine as a Uterine Sedative.—"M. H. Chouppe," says the "British Medical Journal," "has already called attention to the good effects of antipyrine in uterine pains after parturition or in dysmenorrhœa. In proof of this he relates the following case: A woman, aged thirty-five, was suffering from a large myoma situated in the posterior wall of the uterus, accompanied by copious hæmorrhage, which reappeared after menstruation. Ergot checked the hæmorrhage, but caused such severe uterine pains that it had to be discontinued. Large doses of morphine were administered; these caused the pains to disappear, but at the same time the uterine contraction was relaxed and hæmorrhage reappeared. Ergot was again administered, with similar results. The attacks of uterine pains lasted two or three hours. M. Chouppe then had recourse to antipyrine. An injection containing 2 grammes [30 grains] of antipyrine was administered. At the end of twenty minutes the pains disappeared. M. Chouppe then tried the following experiment: An injection of antipyrine was given half an hour before the dose of ergot. The patient experienced no pain, although there was active uterine contraction; hæmorrhage was arrested. M. Chouppe concludes that antipyrine relieves the pain caused by the uterine contraction which is produced by ergot without diminishing the contraction. He believes that it acts upon the spinal cord, and might be administered with advantage during parturition to women of an irritable temperament."

Large Doses of Olive-oil in the Treatment of Hepatic Colic.—Dr. J. Touatre, of New Orleans ("Arch. roumaines de méd. et de chir."; "Lancet"), gives an interesting account of his own cure of biliary colic and gall-stones. The method of procedure was as follows: At seven in the evening a blue pill of the weight of 2¼ grains was taken, and this was followed twelve hours later by a draught of twelve tablespoonfuls of olive-oil; a quarter of an hour later a similar dose of olive-oil was taken, and then the patient addressed himself to sleep on his right side. At nine o'clock the blue pill acted, producing a copious bilious evacuation, but no gall-stones were passed. At three o'clock in the afternoon there was another bilious stool without stones, but from seven in the evening till midnight six stools were passed; the first two contained seventeen calculi of the size of a large pea, of conical shape, grayish-yellow aspect, and soft consistence. Altogether sixty stones were passed, and six of these had the volume of an olive, and were of a black color. The passage of these calculi by the cystic and biliary canals was for the most part unattended with pain, a few spasms being felt, probably at the time of the movement of the large calculi. An inexpressible relief was obtained from the pains over the liver and shoulder, which had previously caused much distress; the liver also diminished in size. For three months Dr. Touatre enjoyed perfect health, when the trouble began again; the olive-oil was repeated in similar fashion, and with the result that eighteen more calculi were discharged by the bowel. Since then he has enjoyed excellent health. He admits that some courage is required to swallow the large doses of olive-oil.

A Gargle for Stomatitis.—Professor Roberts Bartholow ("Am. Jour. of the Med. Sci.," Jan., 1888) says that the following is an excellent formula for a gargle for stomatitis, caries of the teeth, etc.:

Tannin	2 drachms;
Tincture of iodine	4 scruples;
Iodide of potassium	1 scruple;
Tincture of myrrh	4 scruples;
Rose water	8 ounces.

A dessertspoonful, in a small glassful of warm water, is used to wash the mouth with thoroughly every morning.

An Enema for Infantile Convulsions.—M. J. Simon ("Lyon méd.," Dec. 18, 1887) recommends the following enema:

Musk	3 grains;
Camphor	15 "
Chloral hydrate	7 "
The yolk of 1 egg;	
Distilled water	1½ oz.

The rectum should first be emptied by means of a large watery or oily enema.

ANSWERS TO CORRESPONDENTS.

No. 123.—We are not aware that a definite period of service is required. Details concerning the examination can be ascertained by calling at the office of the Civil Service Commission, in the City Hall. In its last annual report sets of questions are given which have been asked at the different examinations, and they show the general tenor of the examinations. It is advisable for an applicant to familiarize himself with the functions of the different city departments, officials, etc.

No. 124.—The theory has been very generally assented to, and is undoubtedly very ingenious, but attention has lately been called to certain facts in embryology which tend to make it untenable.

No. 125.—We believe that gonorrhœa is a specific disease. Ordinarily such a prognosis as you mention would be justified by the progress of the case, but it is well to remember that a simple urethritis may be the prelude to a genuine gonorrhœa, both having been contracted at the same time.

No. 126.—The term is, as you say, absurd, but it has been accepted, and a precise meaning attaches to it.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, JANUARY 21, 1888.

Original Communications.

THE RADICAL CURE OF HERNIA, WITH SPECIAL REFERENCE TO OPEN TREATMENT OF THE OPERATION WOUND.*

By CHARLES McBURNEY, M. D.

OPERATIONS for the radical cure of hernia in non-strangulated cases have now been done sufficiently often, and enough reliable reports have been collected, to justify one in saying that, in any excepting extraordinary cases, the operation is one involving but little risk to life. Referring, for convenience, to the list of cases by different operators collected by Weir,† it is seen that in a total of 379 cases there was a mortality of a little over four per cent. It may fairly be expected that, in the hands of careful operators, this percentage will in the near future be largely reduced, and in fact the mortality has already notably diminished, as is shown by the recent reports of Macewen, Ball, Banks, Weir, Abbe, and others. The great majority of deaths have occurred from two preventable causes, hæmorrhage and septic complications.

Greater care in the ligation of omental pedicles will render hæmorrhage a very rare occurrence, and sepsis will certainly seldom be seen under proper antiseptic precautions, and also, I would suggest, when the practice of treating the operation wound by the open method is more generally adopted. I have myself operated for the radical cure in non-strangulated cases twenty-seven times, the first operation being done in 1882, and various methods having been practiced. One patient died from shock a few hours after operation. He was fifty-two years of age and a hard drinker, and I only operated upon him because his hernia was irreducible and so large and painful that he was unable to move about. In no other case have I observed hæmorrhage, high temperature, or other symptom such as to give me the slightest anxiety.

In this connection I desire to call the attention of those who look upon the radical operation as a dangerous one, and as one only to be adopted under exceptional circumstances, to the fact, which is often ignored, that every patient who has a hernia is already in a dangerous condition.

This is a very trite observation, and yet how often does one hear and read, in reports of cases of incarcerated or strangulated hernia, that by careful taxis in this or that method "the hernia was reduced and the patient dismissed with a suitable truss"! Trusses will doubtless improve and patients will become more careful in their use, but certainly, at present, a truss is, to the average man, an unreliable guard against a strangulation of his hernia. This statement is supported by the experience of every surgeon who has met with many cases of strangulated hernia, not a few of the worst of such cases having occurred in individuals who have persistently and successfully worn a truss up to the time of some accidental breakage of the truss, or some unusual exertion. It might fairly be said that probably in most of these cases the trusses were inferior, or imperfect, or badly worn; nevertheless, the fact remains that the average man who has a hernia, and who depends for safety upon the usually imperfect truss, does continually run a positive risk. If, then, a safe operation for a non-strangulated hernia could offer to the patient a probability of permanent radical cure, thereby avoiding the future risks of strangulation, the mortality record of the operation should be viewed from a different standpoint than if the operation were done for the relief of an infirmity that could never in itself prove dangerous to life. It should rather be compared to the mortality following operations for the relief of close stricture of the urethra, a condition, when neglected, liable to result in retention and extravasation of urine. The condition first spoken of—that the operation should offer to the patient a probability of permanent radical cure—is certainly now the one which especially interests the surgeon, the question of the reasonable safety of an operation having been settled in its favor, and the question of the permanence of the cure after operation being still an open one. I shall not occupy the time of the society in describing the various operations which are now being done, and with which you are all familiar, but I must refer to certain steps in these operations in order to explain the reasons that have led me to adopt a particular method.

Certainly no operative procedure is worthy of the name of radical cure that does not, at least in the very large majority of cases, secure to the patient not only a permanent relief from his malady, but also a freedom from mechanical appliances used to prevent its return. A method such as Heaton's, which does not even purport to obliterate the hernial sac or its communication with the general peritoneal cavity, but only to excite a variable amount of condensation of the areolar tissue outside of the sac, does not deserve the name of radical cure. Moreover, the percentage of failures by this method, generally acknowledged to be about 70 per cent., and the necessity for using after it some appliance in the form of a truss or bandage to prevent recurrence, justify one in calling Heaton's method at best an uncertain palliative procedure. No one who has watched the steady advance of a hernial protrusion in a case of recurrent hernia will believe that a mild thickening of tissue outside of the sac will often prove to effect a permanent cure. Nor do I think that a patient who is obliged to wear a truss after such an operation can be more properly called cured than one who wears an elastic stocking for the relief of varicose veins, or a splint over a half-united fracture. To the same objections are open all operations which depend upon plugging the canal with an inverted pouch of skin, or upon narrowing the canal by sutures passed subcutaneously. Apparently some permanent cures have been effected by means such as these, but no surgeon will deny, I think, that so long as a communication exists between the general peritoneal cavity and a hernial pouch, no matter how small the latter may be, just so long is there danger, not only of a hernia, but of a strangulated hernia.

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* Read before the New York Surgical Society, December 28, 1887.

† "Medical Record," March 5, 1887.

It is true that, if the hernial canal were a tube with unyielding walls, a firm plug of any kind pushed into that canal, either within or without the sac, would prevent anything from descending through it; but, as the canal has boundaries which are capable of enormous distension under the steady pressure of the hernial wedge, one would not often expect a permanent cure from the insertion of a barrier which does not obliterate the sac, and which itself tends by atrophy to become constantly smaller.

That a communication between the general peritoneal cavity and a hernial sac may exist for a long time without the occurrence of a hernia has been noted by many. In two of my own cases, both patients being adults, the hernial pouches were found to be congenital, and yet in one case the hernia had existed for only three years, in the other for three weeks. Yet, undoubtedly, either of these patients had been liable at any time, under proper provocation, to the sudden development of a strangulated hernia.

The great real advance in attempts to cure hernia radically was made by Riesel, Czerny, Nussbaum, and others, who appreciated not only that the exposure of the sac by a cutting operation was a sufficiently safe one, but that it was the *only* method by which that all-important end, the complete obliteration of the sac, could be attained. In most of his cases Riesel tied the neck of the sac as high up as possible, leaving the sac below the point of ligature to help fill the distended canal. Nussbaum, Sewel, and Czerny tied the sac high up, but they removed the sac below the point of ligature. And it is now generally accepted by surgeons that the most important step in the attempt to cure a hernia radically is the complete obliteration of the hernial pouch of peritonæum. To illustrate the truth of this proposition, I refer to the histories of three cases in which the sac was not removed:

Case I.—M. M., aged sixty-five, a large-bellied man, with flabby abdominal wall, was admitted to St. Luke's Hospital under my care on May 31, 1886. This patient had been operated upon by one of my colleagues six months before for the relief of a large left inguinal reducible hernia.

He came to me for relief on account of a ventral hernia on the left side, situated above the internal ring about half an inch, and opposite the middle of Poupart's ligament. The hernia consisted of a protrusion of about the size of a half-egg. The base of the tumor was much larger than the apex. I dissected out the hernial sac, to which, of course, there was no neck, and its greatest depth was less than one inch. Freely exposing the edges of the opening in the abdominal wall, these were very strongly brought together. On June 24th the wound had firmly healed, and a strong cicatrix had formed. This patient was seen by me a week ago. Both the scrotal and ventral hernia had recurred, according to the patient's account, very soon after operation.

Case II.—A. F., aged twenty-four, came under my care on February 5, 1887. Patient had a right inguinal reducible bubonocele. I operated on February 14th. The entire sac returned to the abdominal cavity during etherization, and it was impossible to draw it down. The wound was treated by the open method, and a very strong sound cicatrix formed. On March 13th the wound was entirely healed. In less than a month the hernia had returned, and was at least half as large as it had been before operation.

Case III.—P. H., forty-two years of age, came under my care at Bellevue Hospital on December 23, 1886. Patient had a left inguinal reducible hernia of moderate size, which had existed for only four weeks. The tumor entirely disappeared in the recumbent posture. I operated on December 30th, and, as in the preceding case, found that the sac had entirely disappeared. A careful search failed to discover it. The wound, on February 14th, was soundly and strongly healed. The patient was examined by me about a month ago, and the hernia found to have recurred, and to be considerably larger than at time of operation.

As already stated, these cases are cited to show how important it is to completely obliterate the sac in attempts to obtain a radical cure. They are the only cases I have operated upon in which the sac has not been found and removed.

The method of closing the sac by ligature is clearly better than the other plan of cutting it off and closing the communication with the peritoneal cavity above by suture. It is more rapid, it is more even, and the great danger is absolutely avoided of having the intestines suddenly forced out through the wound by an unexpected effort of coughing or vomiting. Two other methods of shutting off the sac remain to be referred to—one that by torsion of the sac, the other that of Macewen.

By whom the first suggestion of twisting the sac was made I do not know, but the application of the method has recently been described by C. B. Ball,* who reports twenty-two cases with no deaths, and only three failures or "partial" recurrences. This method does not, I think, appeal to one as absolutely safe, for there must in its application be some danger that a portion of intestine adherent near the mouth of the sac be drawn into the twisted canal. Nor could one be certain that the twisting process would not rupture the peritonæum at one or more points. Macewen retains the entire sac, doubling it up by means of a suture passed first through and through it, and then through the abdominal wall above and to the outer side of the internal ring. This suture, being fastened to the lower end of the sac, when drawn upon from above puckers the sac up longitudinally, and forms, as Macewen calls it, "a boss or bulwark on the peritoneal aspect of the internal ring."

That this method obliterates the sac is evident from the brilliant results obtained by Macewen † in a large number of cases, but I question its superiority in ordinary cases over the carefully applied ligature, and in larger herniæ it makes no provision at all against the great laxity of peritonæum which exists in all such cases around the internal orifice of the canal.

It seems to me clear that we should endeavor to restore to the peritonæum at the internal ring the naturally smooth surface that exists where no rupture has occurred, but that we can not depend upon a thickening of peritonæum at this point, as by Macewen's method, to give strength to the abdominal wall. Strength is to be obtained by closing the gap existing between the lower edge of the combined internal oblique and transversalis muscles and Poupart's ligament.

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* "British Med. Journal," December 10, 1887.

† *Ibid.*

As a substitute for this complete repair of a vitally weak spot, much labor has been lost in sewing up the pillars of the external abdominal ring. This has been done, and is still done, by many operators, different forms of suture being used—silver, catgut, silk, etc.—each suture being especially praised by one operator or another. One reads still of "freshening" the borders of this external ring—the edges of which are formed by tendinous fibers only, and are not much thicker than a sheet of paper—with a view to their ultimate union.

It is evidently impossible to cause the edges of the external abdominal ring to grow together, for, in the first place, they are too thin, and, in the second place, the ordinary movements of respiration alone, to say nothing of the numerous other occasions when the external abdominal muscle is rendered tense, pull the edges apart. The truth of this statement can easily be tested, as I have done it, by drawing the pillars of the ring together on the cadaver and then imitating the contraction of the muscle by tension applied in the direction of its fibers. This is doubtless a provision of nature to avoid compression of the cord and its vessels. Sutures, whether permanent, as of silver or silk, or temporary, as of catgut, must soon become loose, as in other parts of the body when subjected to any tension. The value, then, of sewing up the external abdominal ring must depend entirely upon the amount of *permanent* union that is formed between its edges. It is evident that between thin sheets of diverging tendinous fibers no strong union can be effected in this manner. Another vital objection to trusting to the practice of sewing up the external abdominal ring is this: It makes no provision for the portion of canal existing between the internal ring above and the external ring below. If a recurrence commences at the internal ring the distended canal is still there ready to receive it, and sooner or later the advancing wedge must break down the feeble tissue below.

To repair the damage that has occurred, the whole track from the internal ring downward must be narrowed and its walls strengthened. This has been attempted in various ways, of which Riesel's method, that of Macewen, and the healing of the wound by granulation are the chief representatives. Riesel[*] split the anterior wall of the canal—that is, the external abdominal aponeurosis—as far the internal ring. He then removed a portion of the anterior wall and applied transverse sutures from the internal ring downward, so as to close the canal as completely as possible, trusting that the union occurring would remain permanent. In most of his cases Riesel also, after tying the sac high up, left the empty sac below, believing that as this shriveled up it would give additional protection. The superficial wound was then united over the deep sutures. Macewen's[†] method of strengthening the weakened abdominal wall depends (to use his own words) upon "carrying the conjoint tendon outward" (by means of buried catgut sutures) "toward the fixed, unyielding ligament of Poupart, and uniting it with the transversalis and internal oblique muscles." He says again: "The canal having been refreshed by the finger and the handle of the scalpel during removal of the sac therefrom, its walls are brought into direct contact." While the results of operations as given by Macewen are the best that have been published, I must believe that these results are due to the careful obliteration of the sac, and not to the treatment of the conjoint tendon. The refreshing process with the finger or the handle of the scalpel, which can only mean the breaking up of areolar tissue, would not in any other part of the body result in strong union, *when the parts are afterward carefully covered up with neatly adjusted skin, and treated under a close dressing*, for this amounts to a subcutaneous suturing, as in Wood's operation. To obtain firm *primary* union, tissue must be laid bare with the knife, and surfaces that are actually raw brought in contact. If tension exists, these buried catgut sutures will cut their way through as readily as silver ones, and the tension that will afterward be applied in the erect position will certainly break down any feeble union.

It seems to me, therefore, that this part of Macewen's operation is fairly open to criticism. In the same author's reports of cases of femoral hernia the statement is made that "the falciform process was united to Gimbernat's ligament." How these two thin sheets of tendinous fibers, which occupy planes nearly at right angles to one another, can be made to unite by suture, I am unable to understand.

The conditions for obtaining closure of the canal, or rather union between the separated parts, being very unfavorable, I have come to believe that granulation of the wound, only to be obtained by treating it openly, is the means to which we must look for strong repair. I became convinced of this about a year and a half ago, and since that time I have treated the operation wound in all my cases of hernia by the open method. I was also led to do this on reflecting that the natural method of closing the weak umbilical opening in the infant by the cicatricial process is usually a very satisfactory one. Doubtless it would be more so if the recumbent posture could in the infant be maintained for a longer time.

The method adopted has been this: With the usual antiseptic precautions, a free incision is made, beginning opposite the internal ring and extending to the lower end of the sac. The incision is rapidly deepened at the outer concave edge of the external ring, as, when that is freely exposed, it is easy to follow the sac downward. The sac is then dissected out to its lower end and stripped from all its attachments to the cord, this stripping process being most easily begun at the upper end of the sac. The outer wall of the canal is then split up to the internal ring, thereby enabling one, as Riesel[*] has pointed out, to lift the sac, neck and all, vertically from the body, and so apply a ligature most evenly and perfectly at the junction of the sac and the general peritonæum. The sac should, I think, always be opened before applying the ligature, as, when this is done with care, no additional risk is run, and, the sac being open, it is easy to demonstrate that no portion of intestine or omentum is adherent to the interior. The operator's left forefinger being then introduced into the neck of the sac, and the sac drawn thoroughly out by the right hand, the ligature can be tightened by an assistant over the tip of the operator's finger. This insures positively that the sac is tied high up, and that no intestine or omentum is included. If adhesions exist between the wall of the sac and intestine, these should be broken down if this can be easily done; if not, a thin layer of sac-wall, including the intestinal adhesion, should be dissected off. If any but a very minute portion of omentum is in the sac, whether it is adherent or not, I tie it off very securely with catgut and return the stump (which should be large to avoid slipping of the ligature) to the general cavity.

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[*] Otto Riesel, "Deutsche med. Wochenschrift," Berlin, 1877, pp. 449 and 467.

[†] "Annals of Surgery," vol. iv, p. 91.

[*] Otto Riesel, "Deutsche med. Wochenschrift," Berlin, 1877, pp. 449, 467.

In the case of femoral hernia, the process thus far is the same, excepting that none of the short anterior wall of the femoral canal is cut, as it is very easy in these cases to carry the ligature as high as Gimbernat's ligament and there tie it. There now remains a long wound in the case of inguinal hernia, which includes the whole length of the canal to the internal ring. The bottom of this wound is formed by the fascia transversalis with the peritonæum behind it, and the conjoined tendon and the two deeper muscles above; Poupart's ligament and a strip of external abdominal aponeurosis below. My aim being to mat all of these tissues together by a firm cicatrix, I now sew together, on each side of the wound, from the internal ring to the spine of the pubes, the various layers forming the abdominal wall, excluding, of course, the fascia transversalis and the peritonæum. Six or eight interrupted stitches on the upper side of the wound bind into one thick edge the skin, the external abdominal aponeurosis, including the inner pillar of the ring, and the transversalis and internal oblique muscles and conjoined tendon. As many more stitches on the lower side of the wound bind together the skin and Poupart's ligament, including below the outer pillar of the ring. This stitching is done to insure patency of the wound throughout its entire depth and to provide against the possibility of the formation of a feeble union between any two layers on opposite sides of the wound. The whole canal, including the stump of the tied-off sac, must now be filled up by granulation.

That the wound may not be unnecessarily wide, three or four large catgut stitches are now carried through the thick edges of the wound, the cord being left below them, and the edges loosely brought together. Below the site of the external abdominal ring the wound in the scrotum is closely sutured and, if necessary, drained. The wound being open above, no drain is required there. A strip of iodoform gauze is then packed in the wound, a firm pad of the same material above that, and then a complete and very firm antiseptic dressing with spica bandage applied. This dressing is left on from ten days to two weeks. At the end of this time an irregular granulating wound is left which is slow in healing, six weeks or more being usually required to produce a firm cicatrix. I look upon the length of time spent in bed as a valuable aid in securing strong repair. When the wound is soundly healed, I have allowed patients to get up and go about, always telling them *not* to wear a truss, for I am sure that a repaired wound placed between two compressing forces—the truss without and the abdominal distension within—must necessarily become thin and weak.

In the case of femoral hernia, the sac having been tied as high up as possible, the tissues forming the walls of the wound are stitched in a similar manner. Supposing the wound to extend from above downward, it is easy to stitch the upper angle of the skin wound by two strong sutures to the lower border of Poupart's ligament. The skin at the inner side is stitched to the iliac portion of the fascia lata, and that at the outer side and below to the fascia lata forming the outer and lower edge of the saphenous opening. This process inverts the skin very markedly, and here also a few stitches from one side to the other partially close the wound and relieve tension. The wound is then closely packed with iodoform gauze, and a firm compress applied.

The advantages maintained for this open method of wound treatment are:

1. That in inguinal hernia one is able, after laying open the canal, to very evenly and completely tie off the sac.

2. That, the wound being open, no drainage is required, and the risk of abscess and septic complications is reduced to a minimum.

3. That the walls of the canal are united throughout by strong cicatricial tissue.

I am aware that no one of the cases which I present for inspection could be spoken of as a test case of radical cure. Far too short a time has elapsed since the date of operation in every case. But I have brought some of my patients here merely to illustrate the condition of the parts at different stages after operation.

Case IV.—R. S., a woman, thirty-one years old, admitted into my service at St. Luke's Hospital, May 30, 1887. This patient had a left femoral hernia of five years' standing, and a right femoral hernia of a few months only. Both tumors were the size of a small egg.

Operation on June 3d on Both Sides.—A mass of omentum was found in either sac. These were tied off and the stumps returned. The sacs were then tied with strong catgut very high up and the sacs removed. The wounds were then treated in the manner already described. The repair of the wounds was unusually slow, two small sinuses refusing to heal for a long time. Sound healing was secured, and the patient discharged without a truss on September 3d. Patient examined by me on December 22d. Cicatrix found deeply inverted and very strong.

Case V.—O. L., thirty-three years old, admitted into St. Luke's Hospital on March 22, 1887. Patient had a left inguinal omental hernia of three weeks' standing.

Operation, March 30th.—The sac was found full of omentum, which was adherent on all sides. This hernial sac proved to be a congenital one, the omentum and testicle lying in contact. The canal was split up to the internal ring, at which point, owing to the impossibility of stripping the sac from the cord, its neck was tightly sewed with catgut. By the same method a tunica vaginalis was formed by sewing the lower portion of the sac. The wound was treated as before described. Patient discharged without a truss on May 18th, with the wound soundly healed. Patient seen on December 17th, and condition found perfect.

Case VI.—T. G., aged forty, admitted into St. Luke's Hospital, October 19, 1887. Had a left indirect inguinal hernia filling the scrotum. This hernia had existed for twenty-five years. It was easily reducible.

Operation on October 21st.—The canal was split to the internal ring and the sac ligated at that level, after being opened and found empty. The wound was treated as in other cases, and healed in the seventh week.

This patient is shown simply to demonstrate the appearance of the parts after a recent operation.

Case VII.—S. K., aged seventeen, had suffered for some years from retained testicle on the right side. For a year past the testicle had given trouble by occasionally appearing in the scrotum and then becoming caught in the canal. For the last six months a mass of intestine difficult of reduction had come down from time to time. On one occasion the hernia had become strangulated, and the attending physician had regarded an operation as inevitable. Reduction was, however, effected finally. I operated for radical cure on May 8th. The canal was split its entire length, and the cord and sac tied at the level of the internal ring. The wound was treated as in the other cases, and was soundly healed at the end of six weeks. At the present date the parts appear absolutely strong and sound.

Case VIII.—A. K., aged fifty, female, was admitted into St. Luke's Hospital on November 14, 1884. The patient had an irreducible omental femoral hernia on the right side of two years' standing. I operated on November 17, 1884, by the Czerny method, opening the sac, tying off a large mass of omentum, tying the sac high up, and closing the superficial wound with catgut stitches. This patient was discharged, a small sinus still being open, on December 15th. She returned on May 2, 1887, and was found to have a full recurrence of the hernia.

Second Operation on May 3, 1887.—The sac was found to be empty. It was tied off high up in the femoral canal, and the wound treated as in other recent cases. Patient seen one week ago, and a very strong, sound condition of the parts found.

Case IX.—M. P., aged twenty-four, admitted into St. Luke's Hospital April 19, 1887. Patient had a right partially reducible inguinal hernia of five years' standing. The tumor in the scrotum was of the size of a large egg. Operation on April 23d. The sac was found filled with adherent omentum. This was tied off and the pedicle returned. The canal was split up to the internal ring and the sac tied off as evenly as possible. The wound was treated as described before. On May 27th the patient was discharged without a truss and with the wound soundly healed. At the present time the parts are as strong as ever, with no indication of weakness.

Case X.—F. Y., aged thirty-nine, had suffered from a right omental hernia of small size for some years. I operated on May 21, 1887. The sac was dissected out and opened, the canal split its entire length, the omentum tied off, and the sac ligated at the level of the internal ring. The wound was treated as before described. Sound healing occurred in the seventh week. Patient now reports by letter a perfectly sound and strong condition of the parts.

Case XI.—H. T., aged thirty-two, admitted into St. Luke's Hospital February 1, 1887. Patient had a large left inguinal reducible hernia of three years' standing. Operation February 7th. Sac found to be congenital and empty. The canal was split to internal ring, the sac tied off at that point, and the wound treated as in the other cases. April 4th, wound soundly healed. Patient discharged May 4th without a truss. I have been unable to trace this patient.

Case XII.—R. M., aged sixteen, admitted into St. Luke's Hospital on December 23, 1886. Right inguinal hernia of nine years' standing. Hernia intestinal and of the size of a large egg. It had been reducible up to three weeks ago, since which time the tumor has been constant. Operation on December 28, 1886.

February 3d.—The wound is found completely healed, and the patient was discharged without a truss.*

This patient was seen by me three days ago and the condition of the parts found perfect.

Case XIII.—E. B., aged forty-three, with a reducible femoral omental hernia of the left side of three years' standing, admitted into St. Luke's Hospital on January 22, 1886. This patient I operated upon on March 5th according to the usual Czerny method, the sac being opened, the omentum tied off, the sac ligated high up, and the superficial wound closed tightly with catgut sutures. A recurrence of the hernia took place in January, 1887, and on February 26, 1887, I operated again. The sac, having been dissected out, was found empty. It was ligated as high as possible and the wound treated as in other recent cases, the integument being stitched to the edges of the saphenous opening. The stitches did not hold well, though the wound was healed by April 6th, and the patient was allowed to be up. I examined this patient on December 23d and found that a very slight recurrence had begun.

This is the only case operated upon by this method where the slightest sign of recurrence has occurred.

Case XIV.—A. N., female, twenty-eight years old, admitted into St. Luke's Hospital on May 5, 1887. Patient had a right irreducible inguinal hernia of fourteen years' standing.

Operation, May 7th.—At the bottom of the sac in the right labium the ovary was found. The canal was split to the internal ring and the sac and ovarian ligament were tied off at that level. Wound soundly healed on June 15th, and patient discharged without a truss. Patient seen by me on December 26th and parts found absolutely strong and sound.

THE MODERN TREATMENT OF STRANGULATED HERNIA.[*]

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Encouraged by the remarkable successes in the treatment of cases of strangulated hernia by the methods suggested by Mitchell Banks, Czerny, and others, surgeons have latterly paid special attention to the radical-cure operation as applied to cases in which strangulation exists. In consequence, the operation of kelotomy has been practically revolutionized, and in the lessened mortality as well as the capital results obtained the new operation presents a most gratifying contrast to the old.

The contributions to the clinical literature of this subject have been exceedingly valuable of late, and it has occurred to me that a brief paper on the general principles which underlie the operation, and upon the verity of which its position as a legitimate surgical procedure depends, would not be altogether uninteresting. These are:

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[*] Read before the New York Academy of Medicine, December 15, 1887.

1. A more general recognition by the profession of the value of time in the earlier stages of the strangulation. The day is not far past when surgical aid was scarcely called before the second, third, or fourth day of the strangulation, or until after most serious and often fatal complications had supervened. Earnest protest against this habit of procrastination has to a great extent changed all this, so that now surgical relief can generally be rendered before pathological changes in the tissues that are irremediable have taken place.

2. Modern kelotomy, furthermore, implies an abandonment of those uncertain and pernicious methods of medication and practice which, founded on a false pathology, sought to relieve the strangulation by producing a condition of systemic relaxation. It is now recognized that spasm as a causative agent in the production of strangulation never exists.

3. Modern kelotomy restricts the employment of taxis to within limits that are rational and safe. Necessary as properly directed taxis is in the reduction of hernia, by its indiscriminate and reckless use irreparable damage has been done the intestine. Who among us that sees much of these things has not had the operation reveal a contused and lacerated condition of the gut that was due not to the original constriction, but to the senseless and brutal manipulation (done under the mild term of "taxis") which it had received? In this connection I can but feel that it has been a misfortune to designate by a special appellation the manipulations we make in reducing hernia. The practice has exaggerated their importance in the treatment, and been a fruitful cause of abuse.

4. Modern kelotomy implies the *early* resort to a cutting operation. Inconsiderateness and rashness are nowhere to be more severely reprehended than in the practice of surgery, and yet nowhere do we meet with more conspicuous illustrations of the folly and crime of temporizing than here. Many lives had to be sacrificed before the profession seemed to realize that the gangrene and ulceration, the fæcal extravasation and stercoraceous vomiting, the peritonitis and the collapse, were not necessary and integral factors of the primary condition of strangulation, but *secondary complications*, developing later on in the progress of the disease, the legitimate result of delay in affording relief to the original constriction. Let the strangulation but be relieved before inflammation or necrosis of the gut and adjacent tissues supervenes, and these graver dangers are avoided.

In this connection I may be pardoned for saying that a criticism which savors more of malice than of justice was made not long since, that the author of this paper "cuts every case of strangulated hernia that is unfortunate enough to fall into his hands." This is far from the truth. The author, however, frankly admits that he cuts, and expects to continue to cut, in every case of strangulated hernia in which gently applied taxis, under anæsthesia, preceded as a rule by the application of ice, does not yield reasonable expectations of success within a comparatively short time. By a comparatively short time I wish to be understood as meaning about an hour after positive symptoms of strangulation present themselves. Nothing is gained by delay. Everything is risked. It has so happened that I have never had occasion to cut until six hours had elapsed after strangulation had occurred; but in seven cases in which I have operated during the sixth and eighth hours after strangulation I have in every instance found local disorganization sufficient to justify the operation.

5. Modern kelotomy is an antiseptic operation demanding the fullest application of Listerian principles.

6. Modern kelotomy requires in the disposition of the hernial sac the freest impartiality of judgment. "What shall be done with the sac?" was at one time a prolific theme for acrimonious discussion. Certain cases require incision, and in such cases incision should be made. In other cases the strangulation can be readily reduced without opening the sac. And in such cases it would be folly to complicate the operation, unless other ends were aimed at, by exposing the patient to greater and unnecessary dangers.

7. Since Mitchell Banks, of Liverpool, has urged the possibility and expediency of perfecting the old operation of kelotomy, so as to add to the operation done for the relief of *strangulation* the inestimable advantages of an operation for *radical cure*, the strongest possible encouragement is given for the performance of an early, thorough, and perfected operation.

Treatment of Strangulated Hernia.—Regarding the special treatment of strangulated hernia I have nothing new or novel to add to the excellent recommendations of the later writings on the subject. A considerable experience with the disease in question during the past fifteen years has led to the adoption of a plan of treatment substantially as follows:

1. Pain is allayed, vomiting quieted, and nervous tranquillity secured by the hypodermic administration of morphine with atropine.

2. After the latter object has been in a measure attained, a careful examination is made of the hernial tumor, any attempt at reduction being carefully avoided.

3. If evidences of local inflammation are present, or if there is much swelling of the tumor, a poultice of linseed-meal and cracked ice or Leiter's ice-coil is at once applied. Should the strangulation be of long standing or the patient be feeble, with poorly nourished tissues, these are dispensed with.

4. A stimulating enema of turpentine and oil, or a large emollient one of thin flaxseed-tea, is now administered and the rectum thoroughly washed out. Should it be required, the patient is catheterized. If the tumor is at all distended, no attempt at taxis is made until

5. The patient is anæsthetized, and this is never done until permission has first been obtained to proceed with the operation in case taxis should fail. As the result of this treatment, many, perhaps a majority, of the strangulated herniæ which I have seen in their early stages have been successfully reduced by a manipulation so gentle and *persuasive* as hardly to merit the distinctive title of taxis.

In this connection I desire to emphasize the advantages to be gained by putting the patient under full anæsthesia (preferably, in this instance, by chloroform), covering the tumor with a rather large and heavy ice-poultice, elevating the lower extremities, and keeping the hands entirely off for a period of from twenty to forty minutes.

In a number of instances thus treated I have had the satisfaction of seeing the tumor almost imperceptibly slip back of itself, even after prolonged taxis had been unsuccessfully employed.

Taxis.—Just how long the attempt at taxis is justifiable no absolute rule can be laid down. Every case is a law to itself. To the practiced touch a moment sometimes is sufficient to decide the possibility of a successful reduction. Again, the trial may be prolonged twenty, or even thirty minutes, provided always that the gentlest manipulations are employed.

Taxis being unsuccessful, the operation should be at once undertaken, every antiseptic precaution being observed.

The Operation.—By careful dissection the sac should be freely exposed. If the strangulation is of recent occurrence, and the sac free from inflammation and of normal appearance, an effort may be made to secure its return by gentle taxis into the cavity of the abdomen.

Should adhesions bind down the sac, if not too extensive, they may be broken up, precautions being taken that all bleeding has been effectually checked before the sac is returned. Should constricting bands girdle the neck of the sac and prevent its return, these, if possible, should be divided. Adhesions around the neck of the sac must be treated with deliberation. In the first place, they are apt to hold back the strictured portion, suffering the sac itself to slip through, thus conducing to *reduction en bloc*—a condition I had the utmost difficulty in preventing in one of my cases. Secondly, such adhesions are apt, by closing or partially closing the internal abdominal aperture, to divert the course of the retreating hernia out of the canal and into the intramuscular septa or the subserous areolar tissue. Thirdly, such adhesions, when strong, favor, as I have personally observed, an easy rupture of the wall of the sac. Fourthly, they not only are prone to bleed freely themselves, but, by their contraction, they can draw down important blood-vessels, as I had opportunity of witnessing last winter. I was assisting a friend in an apparently simple kelotomy—an indirect inguinal. The stricture which the doctor was about to divide was at the internal ring. Desiring to inform myself of the condition of the parts, with the doctor's permission I passed my finger up to the ring (the sac not being opened), and found an unusual amount of adhesive material crowding the canal on all sides. Careful examination revealed the deep epigastric artery, enveloped in a mass of inflammatory material, skirting the *outer* and *upper* border of the ring, where it would certainly have been divided had the customary incision been made.

Serous effusion within the sac may be safely got rid of by puncturing the sac with a capillary hypodermic needle. If now the sac can not be readily reduced, it should be carefully opened.

Unprejudiced surgeons, I believe, now agree that in all those cases where it would be safe to replace the hernia by simple taxis—if *that* were possible—the same thing may be done after restraining adhesions of the sac or constricting bands around its neck have been divided by the knife. But in those cases in which the symptoms are suggestive of an aggravated condition of the bowel, and on account of which it would be hazardous to attempt to reduce it by taxis, the sac must be opened. The sac being opened, the stricture should be sought for and divided according to established surgical rules.

One or two points of interest in connection with the return of the gut suggest themselves just here. Of course the primary object for which the operation was undertaken was to liberate the constriction and return the gut to its natural cavity. Certain conditions, as we all know, may be found upon examination that would not render its immediate return advisable.

Dependent partly upon the constriction that was the original cause of the strangulation and partly upon the violence that has been inflicted upon the hernial tumor in efforts at reduction, the walls of the gut are found to be more or less swollen, infiltrated, ecchymosed, softened, or gangrenous. These pathological changes vary through every degree from a pinky congestion to extensive sphacelus with fæcal extravasation.

In some cases a deep groove or sulcus will mark the seat of the constriction. Again, a line of ulceration may be found only at that end of the strangulated bowel directly continuous with the upper and distended portion of the alimentary canal, while the parts below are normal. This was well illustrated in a case in which I operated last week, fifteen hours only after strangulation. Or, again, the surface of the bowel lying within the sac may be dotted over with innumerable minute gray points of necrosis, or the gut may be softened, of vinous or purplish hue, and easily torn.

Now, under these conditions, what should be done? In cases of simple congestion and sphacelus the answers are simple. Return the gut in the one case, and make an artificial anus in the other. In cases of deep congestion a serious perplexity often arises. How far the vitality of the bowel is consistent with change of color, drying of the secretions, emphysematous crackling, and fæcal odor, I must confess I do not know. I have seen two cases, both occurring in the practice of the late James R. Wood, in which gut that was actually purple was replaced, and in both instances with the best possible results.

That distinguished surgeon was a firm believer that "the belly was the best place for the bowel!" I have been interested to note in two cases of my own, in which my attention was specially engaged in this matter, that in one case, where a deep furrow marked the seat of the stricture and where the gut itself was of a dark maroon shade, the condition of the gut did not warrant its reposition for nearly three hours after the operation, whereas in another case of more prolonged strangulation—graver constitutional symptoms—the conditions of the gut being almost identical, only without the furrow or groove, the circulation was restored in one fourth the time. I do not know if these observations show anything of themselves, but with others they may help us in deciding one of the many perplexities that arise.

I do not feel that we are ever justified in returning strangulated intestine until it gives some evidence of reanimation. It is perfectly feasible to keep it enveloped in moist flannels and rubber tissue for several hours.

Regarding ulcerations, if they are small and covered with a layer of fibrinous lymph—as not infrequently they are—they should be left alone, although I do not think it is wise to replace the intestine if there is reasonable ground to suspect that ulceration extends through the wall of the gut. I knew a case, under just such a condition, to terminate on the second day in rupture, fæcal extravasation, and death.

If the condition of the gut warrants it, and sometimes it may not do so until several hours after the operation, partial excision may be practiced and the intestine successfully reduced. In some experiments I made several years ago upon dogs I was surprised to notice the remarkable vitality the intestine displayed after very serious local bruising. The arterial supply is so abundant it could hardly be otherwise, and, in the light of these experiments, I have maintained a favorable prognosis in the face of serious discoloration, dryness, crackling, and even a fæcal odor, provided the parts were kept warm and moist and left alone. Extensive perforations and lacerations occurring in herniated bowel necessitate the formation of an artificial anus.

Adhesions.—Adhesions have been to me a source of great vexation. They may be acute or chronic. If acute, and simply binding down the body of the sac, they may be gently broken down. If they surround the neck of the sac, binding the intestine to the upper end of the sac, or the intestine to the cord, or the intestine to an undescended testis, as in one of my cases, the separation must be accomplished with the greatest possible gentleness and circumspection, on account of the extreme friability of the tissues.

Chronic adhesions may be divided with more boldness, provided no traction is made on the inflamed intestine. In all cases the intestine, both above and below the strictured portion, should be carefully examined after the operation.

Regarding the return of the intestine and the treatment of the omentum I have nothing of interest to add to well-established surgical rules.

Treatment of the Sac.—The modern operation finds its greatest advantage in the radical cure it favors by the complete closure of the sac and permanent obliteration of the hernial canal. After the old operation the enlargement of the ventral apertures necessitated by the operation actually left the opportunity for the occurrence of hernia far greater than before. Availing himself of the immunities against inflammation afforded by antisepticism, Mitchell Banks suggested the propriety of completing the operation of kelotomy by replacing the gut, ligaturing and removing the sac, and closing the canal by deep sutures passed through the abdominal walls, thus approximating the sides of the canal and obliterating its cavity. As a result of his investigations, not only was a decided stimulus given the subject of kelotomy, but it was speedily demonstrated that such operations were signally more successful regarding mortality not alone, but especially in the capital results obtained. The operation has been successfully performed upon all forms of hernia—inguinal, femoral, and umbilical—and with equally satisfactory results.

Without treading on the ground of my fellow-essayists, of whom I must beg pardon for occupying so much of the evening, I would beg to add that in the present light of hernial surgery no operation for strangulated hernia can be said to be properly and surgically performed without the final closure of the hernial canal. By this practice five decided advantages are gained.

1. Complete isolation of the peritoneal cavity and its permanent closure.

2. Permanent closure of the open and patulous orifices through which the gut escaped.

3. Shortening of an abnormally elongated hernial canal.

4. Prevention of septic percolation into the cavity of the abdomen in case suppuration should ensue.

5. *The inestimable advantages that would result to a patient from a permanent cure.*

In the performance of the operation the clinical requirements are, first, a safe and satisfactory disposition of the sac, and, second, a total obliteration of the hernial rings and an accurate coaptation of the sides of the canal.

Disposal of the Sac.—The sac may be dealt with in one of several ways.

1. The sac may be reduced within the abdominal cavity and the canal then obliterated.

2. The sac may be left within the canal (especially when firm adhesions prevent its safe return), and the superficial tissues and the skin be firmly approximated over it.

3. The sac may be ligatured, the hernial investment amputated, and the stump returned.

4. The sac may be ligatured, amputated, and then invaginated in the canal.

5. The sac may be drawn up upon itself and fixed as a bulwark against the internal ring, as in Macewen's operation.

6. My friend, Professor J. D. Bryant, suggests, in his recent surgery,* dividing the abdominal wall longitudinally and parallel to the pillars and then weaving the sac into the fibrous structure.

The first method, except in very acute hernia, should be dismissed from consideration. A thickened and partly inflamed sac thus reduced may readily light up a peritonitis. Adhesions, with attendant pain and discomfort, are apt to form to a much greater degree than in cases where the sac has been ligated and removed.

The objections to the second method are that with the sac remaining *in situ* complete obliteration of the canal can not be effectually secured. A canal thus treated becomes exceedingly sensitive and a truss can scarcely be worn. Between the comparative advantages of the third, fourth, and fifth methods a choice can sometimes be made only after mature deliberation.

I have operated in nine cases of strangulated hernia in which I have been enabled to carry out the operation in all its details. Eight of the patients recovered; one developed delirium tremens on the second day, and died from that cause on the fourth.

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* "Manual of Operative Surgery," D. Appleton & Co.

Of the nine patients so operated upon, all were cut within the first twelve hours of strangulation—two during the sixth hour, four during the seventh, two during the tenth, and one during the eleventh. Seven were males, two females. Among the males six had inguinal hernia, one femoral; the females both had femoral hernia. Of the inguinal variety, four were indirect entero-epiploceles, two were direct enteroceles. Of the femoral variety, one was an incomplete enterocele, in the man. In the women both were complete femoral enteroceles.

In two cases of the femoral variety, and in two cases of the inguinal, after the sac had been freely exposed and opened and adhesions broken, the intestine was at once reduced. The sac was drawn down and transfixed by a double ligature, which was tied with Tait's Staffordshire knot. The distal portion was then removed. The sac (in two cases slightly charred by the application of the actual cautery) was then pushed up into the abdominal cavity. A drainage-tube was introduced and the wound closed by sutures.

In one case of femoral hernia and in three of inguinal the sac was first securely caught at the opposite sides by hæmostatic forceps, just enough of the tissue being seized to prevent the possibility of the sac slipping back into the abdominal cavity. Amputation was then performed. Bleeding was at once arrested, catgut ligatures, if necessary, being employed. The divided extremity was now firmly united by the shoemaker-stitch, strong and reliable catgut, as recommended by my friend, Dr. Henry O. Marcy, of Boston, being used. The stump, dusted with iodoform, was now returned into the cavity of the abdomen, care being taken to push it as far as possible from the internal orifice of the canal, a procedure I should not countenance had I not absolute confidence in my sutures. The canal was now closed over a drainage-tube and the dressing applied. In one case, owing to the unusual size of the canal, instead of returning the stump, it was purposely retained within the canal, and the method as advocated by Macewen, of Glasgow ("Annals of Surgery," August, 1886), employed. The sac was freed from all adhesions. Its free extremity was then firmly tied to one end of a straight catgut ligature, which was carried by a curved needle several times through the sac and ultimately through the abdominal wall about one inch above the internal ring.

By making traction on the ligature the sac was puckered into a ball-like mass (Mr. Macewen says, "folded upon itself like a curtain"), which was drawn completely within the cavity of the abdomen, where it is supposed to act as a bulwark against the future descent of the hernia.

This is the only case in which suppuration of any material consequence occurred. Had I ever seen the operation performed, or had I had previous experience with it, I might have secured a better result. As it is, the cicatrix is very painful, and a hardened mass at the site of the internal ring will scarcely tolerate the slightest pressure.

Sutures.—Wire, catgut, and silk are used for closing the canal, and each has enthusiastic advocates. In all ordinary cases I prefer a strong, firm catgut prepared by Kocher's method, passed deeply within the tissues, and drawing by lateral traction the tissues from either side. In introducing them I begin at the internal ring with a long ligature armed with a strong needle at either end. This I employ exactly after the fashion recommended by Emmet in closing a deep laceration of the cervix uteri.

To insure absolute coaptation the needles must be passed deeply, and firm pressure is often required. After the canal has been satisfactorily closed, an independent set of silk sutures is passed through the integument.

If, now, the slightest doubt exists of the accurate adjustment of the canal, two or three silk sutures should be passed deeply through the walls of the abdomen and fastened by buttons or quills at the side. Under most circumstances, and especially if adhesions have been divided around the sac, a drainage-tube should be introduced. Needless to say, the fullest attention to antiseptic details should be employed in all stages of the operation.

Two points of a practical nature suggest themselves: First, in case of stercoraceous vomiting and collapse, nothing has equaled in my experience the use of hot water, employed as a stomach douche after the suggestion of Mr. Tait.

A long soft-rubber tube should be passed into the stomach and a stream of hot water should be very gently injected in a continuous current by means of a fountain, or, still better, by an alpha syringe. By this means the stomach is not only thoroughly washed of its fæcal contents, but hot water so employed is the best possible stimulant in cases of hernial collapse.

Secondly. As a factor in the production of acute general peritonitis, concealed herniæ in exceptional localities are apt to be overlooked.

In an experience of over one hundred cases of acute general peritonitis occurring in hospital and consultation practice, I have twice found an unrecognized strangulated hernia the exciting cause of the disease—in one case an inguinal bubonocele of the direct variety occurring in a very corpulent old man, and in the other a concealed femoral hernia in the young wife of a fellow-practitioner, in a near town, that I have seen only this week. The first patient was relieved; in the case of the latter, however, death occurred before assistance could be rendered.

HOW SHOULD THE SAC BE TREATED IN A KELOTOMY?*

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In considering whether, in performing a kelotomy, a surgeon should attempt to bring about not only relief to the strangulation, but also a possible cure of the hernia, three points can be profitably dwelt upon in the brief time allotted to me in this discussion. They are these:

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* Remarks made in a discussion on strangulated hernia before the New York Academy of Medicine, December 15, 1887.

1. Is the mortality increased by the additional surgical procedure required to effect this?
2. How is this additional operation to be done?
3. How reliable is this procedure?

For the solution of the first point only incomplete statistics can be furnished. By the old method of operation, and before the days of antiseptics, the mortality was very great. According to König,[*] it reached in 1,350 operations to 39 per cent. Benno Schmidt,[†] in also a large number of collected cases, reports a mortality with the old operation of 45 per cent. The use of antiseptics did not improve the death-rate very much at first. Schmidt, out of 308 kelotomies performed under antiseptic precautions, had a death-rate of 36·6 per cent., only 8·4 per cent. less than without these precautions. There are good reasons why antiseptics primarily have not more satisfactorily reduced the mortality in this operation. One is that, at the time a kelotomy was then done (1870 to 1880), the parts were, by the common delay at arriving at this point, more or less in an infectious condition from the long strangulation, and, after the constricting band had been relieved, the general peritonæum was exposed to inoculation by the replacement of the damaged intestine, or the same effect was produced by the wound secretions leaking into the abdominal cavity through the left-open sac. The first of these risks may now be partially guarded against by freely washing or disinfecting the loop of intestine before replacing it, or by tying off the omentum if this is in the hernia. That the latter risk—that is, the one coming through the open sac—is the greater of the two, is shown from the improved results that have been furnished by the surgeons who have within a few years practiced in kelotomy the removal or closure of the sac. Banks,[‡] of Liverpool, for instance, gives 26 cases of strangulated hernia treated radically, as it is called, with but one death.[#] Andaregg[‖] presents 71 cases with 11 deaths. Leisrink[△] likewise publishes 188 cases with 33 deaths. Footing these up, without fatiguing you with further quotations, a total of 285 cases with 45 deaths is obtained which have all been treated radically, and which give a lessened mortality of 15·8 per cent.

This great saving of life of nearly 25 per cent. I would not assert to be due to the use of the radical method alone, though this has, in my estimation, been of much value in the production of this excellent result. Another very important factor should be counted. This is the fact that there is nowadays a readier acquiescence in prompt surgical interference, both in the professional and in the lay mind, than existed fifteen or twenty years ago. Such may be considered the indirect influence of antisepsis, and is not without much effect on the success of this and other operations where delay proves most disastrous.

Having plainly but not exhaustively set before you the benefit of the radical treatment of the sac in an operation for strangulated hernia, I will pass to my second point, as to the mode of procedure, and will occupy here but a few words, as this subject has been elsewhere fully dwelt on by me.[*] There are two well-known ways of dealing with the sac. After it has been opened, and the hernial contents liberated[†] and appropriately treated, and if gangrene is not present or threatened, the sac is stripped up to the level of the peritoneal cavity, when it can be either pulled down, transfixed, and tied with a doubled piece of strong catgut, and then cut off, as Nussbaum and Czerny have suggested (see Fig. 1), or, instead of doing this, treated according to the method which has been advised by Macewen, of Glasgow, in whose hands it has had a remarkable success. By this plan the sac is wrinkled or crumpled up in curtain-like folds into a pad or irregular mass (see Figs. 2 and 3), which is placed and secured in a little pocket that has been previously made by the finger stripping up the peritonæum from the fascia transversalis for half an inch all around the internal ring, if the hernia is an inguinal one, or around the femoral ring if the hernia has appeared below Poupart's ligament. This is easily understood by glancing at these diagrams taken from the article just alluded to, to which, to save time, I beg to refer you for further details of this and other steps of the operation; or, better yet, I would ask those about to

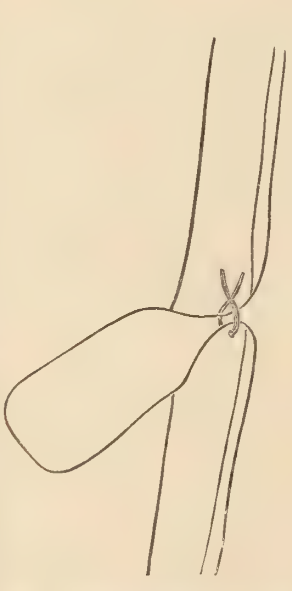

Fig. 1.—Tying the neck of the sac close to the internal ring. (Nussbaum, Czerny.)

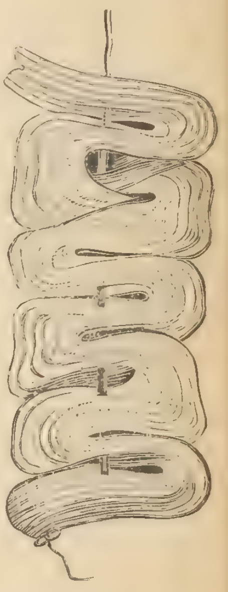

Fig. 2.—Folding up the hernial sac. (Macewen.)

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[*] "Lehrbuch der speciellen Chirurgie," Bd. ii, S. 300.

[†] "XII. Congress d. deutsch. Gesellschaft f. Chirurgie."

[‡] "Med. Times and Gaz.," July 5, 1884.

[#] In the "British Medical Journal" for December 10th, received since my remarks were made, there is a report by Banks and Macewen on the subject of the radical operation for hernia. Banks gives 38 cases of strangulated hernia, with 3 deaths. Of the 35 patients who recovered, 15 were permanently cured, 8 were not cured, 9 could not be traced, and of 3 nothing is mentioned.

[‖] "Die Radicaloperation der Hernien." "Deutsch. Zeitschrift f. Chirurg.," 1886, Hft. 3, 4.

[△] "Die moderne Radicaloperation der Unterleibsbrüche," 1883.

[*] "On the Cure of Reducible and Irreducible Hernias by Heaton's Injection Method and by Radical Operation," by Robert F. Weir, M. D. "Medical Record," March 5, 1887.

[†] This has been found to be difficult or impossible at times in femoral hernias, and in inguinal hernias Banks and the writer have both encountered large intestine of which the partial peritoneal coat formed part of the hernial sac.

perform it for the first time to read Macewen's original article in the "Annals of Surgery" of August, 1886.[*]

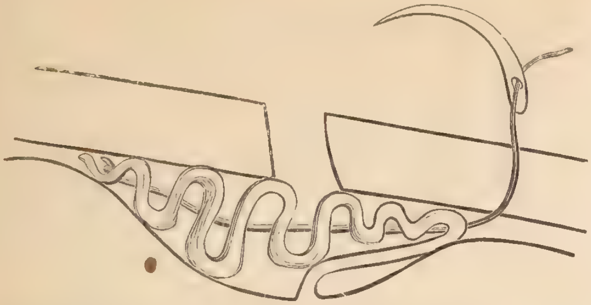

Fig. 3.—The subperitoneal tucking up of a folded hernial sac. (Macewen.)

There are other methods which have been suggested to accomplish the thorough obliteration of the depression of the peritoneal surface at the mouth of the hernial opening, which both of the preceding plans seek to do. Some twist the sac into a rope and fasten it in this condition. Barker, of London,[†] in an article just published, recommends, after cutting off the sac, to pull it up the canal as far as possible, and secure it by sutures passed through the abdominal wall, as Macewen does (see needle in Fig. 3). All surgeons, however, are agreed in closing, in some way, the mouth of the hernial sac, though on other points differences exist. Variations, for example, occur in the method of diminishing the size of the inguinal canal, whatever may be left of it. Macewen and Franks[‡] endeavor, by sewing the inguinal canal in a peculiar manner, to offer a valve-like obstacle to the egress of the reduced hernia, while, on the other hand, Andaregg questions strongly whether it is necessary to sew up the canal at all. In the six cases of strangulated hernia in which I have myself resorted to the radical operation I have used the Czerny and Nussbaum method of cutting off the sac and sewing up the canal in all save one case, where Macewen's method was followed. I can only state from this small experience that the first-named plan was to me the simpler one, and the one most rapidly performed, a point worth taking into consideration in any important operation, and such a kelotomy evidently is. It is, however, true that increased dexterity in the Macewen method—I having until now only performed it some eight times—might cause at some subsequent time a revocation of this remark. My own feeling concerning the use of sutures is to put them as close to the abdominal opening as possible. Most operators resort to catgut as a suture material, though silk and silver are likewise employed. If the latter is used, but a single twist should be given to hold it (Banks). I prefer myself to use heavy catgut.

The only other point that I will take time to allude to is whether or not a truss should be used after the operation. A growing sentiment is opposing itself to the resort to this appliance or to any compressive means beyond, perhaps, a suitable pad and bandage. Macewen, Andaregg, and Barker recommend decidedly that no instrumental support be used unless the hernia should reappear. In my own later cases of the radical operation for non-strangulated hernia I have employed flat trusses with very light pressure, but my experience leans more and more to their abandonment, and tends toward the support, for a month or two at the furthest, of a simple bandage.

As to the third division of my remarks, on the permanent results of the radical operation in strangulated hernia, I must again quote from the exhaustive article of Andaregg, in which is a detailed series of 61 long-observed cases of strangulated hernia where kelotomy was resorted to. In all these the radical operation by Nussbaum's method was performed save in six instances, which, by reason of gangrene, etc., of the intestine, were not suited to this procedure. Out of these 55 patients radically operated on, 38 were free from any return of the hernia; in fact, were cured completely and remained so for periods ranging from six months to nine years, or during the time they were under observation.[*] Macewen also furnishes us the statement that out of 23 cases of strangulated hernias treated by his plan of reposition of the sac and closure of the canal, all the patients recovered, and 18 remained cured between one and four years; the 5 other cases were either recent or had passed from under observation.

Reichel,[†] whose brochure contains much that is interesting concerning hernia, was able, out of 54 patients who recovered after the radical operation for strangulated hernia, to trace for a long time the history of 21, and found that in 7 of them he had met with a complete cure.

Leisrink has made the statement that the radical operation is less apt to be followed by a relapse when performed for strangulated than for free hernia. This is hardly supported in the summing up of the foregoing cases, 138 in all, where it will be seen that the relapses amounted to 68, or 49 per cent. While I have shown in a previous article that the number of relapses in free or non-strangulated hernias amounted to 47 per cent., Macewen, whom I have there quoted incorrectly, has had the remarkable success of no relapses in 25 cases of free hernias. This peculiarity connected with strangulated hernias, if it really exists, is not readily explained. It may be that the slight local peritonitis excited by the constriction, etc., may form adhesions enough after replacement to either anchor the too long omentum or mesentery or to broadly cover over and guard, so to speak, the region of the abdominal opening. But this is speculating on a small margin. When the foregoing results, though succinctly placed before you, are taken in connection with the well-known fact that after a kelotomy, as it is ordinarily done, the return of the hernia is the rule, the value of the radical operation will, I think, at once be appreciated in bringing about a permanent cure.

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[*] Reproduced in substance in the article in the "British Medical Journal" before alluded to, with a report of 81 cases treated by the radical operation, of which 29 were cases of strangulated hernia. No deaths followed the operation. Of these 29 patients, 27 were free from subsequent hernial protrusion, and 2 passed beyond observation. Of the 51 with non-strangulated hernia, 33 remained cured for periods extending from 6 months to 5 years.

[†] "British Med. Journal," December 3, 1887.

[‡] *Ibid.*

[*] Of these 38 patients, 4 were observed from six to nine months after the operation, 13 from one to two years after, and 21 from two to nine years after. Relapses were very uncommon in both free and strangulated hernias after the second year.

[†] "Die Lehre von der Brucheinklemmung," Dr. Paul Reichel, 1886.

In concluding these brief remarks advocating the use of the radical operation, I venture again to state that, while it is a marked improvement in the treatment of hernias, whether free or strangulated, yet it can not be considered as a perfected operation. The relapses are sufficiently numerous to show us that the methods employed are still unsatisfactory. Whether the bolder method of Riesel, of splitting up the canal to the internal ring in inguinal hernias, with its ready suturing of this ring and its subsequent narrowing of the canal by taking away a section of the anterior wall, and then suturing together what is left—whether all this is efficacious as well as free from risk remains to be proved, but this plan is ideally correct. It has been tried too seldom to speak of its value, and indeed the other methods just detailed have also as yet been too little tested to be laid aside for any other. Time and increasing experience will, without doubt, bring the desired wisdom. The former will not be long, for the latter is rapidly increasing. Surgeons are everywhere practicing the operation, and I fear too freely in non-strangulated hernias, for, though the risk is small in this variety by a percentage estimate, it should be remembered that it may nevertheless come to the patient last under the surgeon's knife.

THE CONSERVATIVE TREATMENT OF IRREDUCIBLE AND INCARCERATED HERNIA.*

By W. B. DE GARMO, M. D.,
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The treatment of irreducible and incarcerated hernia, it would appear, follows two extremes, according to the particular practice of the medical man who sees the case.

If seen by the general practitioner, the patient is usually informed that very little can be done, and that he must get along as best he can with his infirmity. If seen by the active surgeon, he is assured that in an operation lies his only hope of relief.

Now, while in some instances one of these lines of practice may be right, the following cases are intended to show that, in a fair number at least, they may both be wrong.

At the outset I wish it distinctly understood that these remarks apply *exclusively* to hernia where the protruding mass is not in a state of strangulation nor in an inflammatory condition—to herniæ which, from their size and shape, or from adhesions formed, can not be reduced, and, while they are not constantly painful, are productive of inconvenience, discomfort, and at times dangerous symptoms of strangulation.

I shall try to maintain that the abandonment of these cases, after a hasty examination, is entirely unjustifiable, and that to decide upon operative measures after a few moments' consideration is equally unjust for the reason that a good percentage can be relieved by safer means.

The following cases, while few in number, illustrate the facts in a striking manner:

Case I.—September 10, 1879. Mr. C., merchant, forty-two years of age, short and corpulent, had for ten years had a small inguinal hernia of the left side, which gave him very little trouble. During the last five years, however, he had noticed a tumor in the scrotum, which was increasing in size, and remained there at night. This tumor was painless, except at intervals, when symptoms of strangulation would threaten. After each attack of this kind there followed an inflammatory action which seemed to involve the whole mass. Six different physicians have, after brief examinations, pronounced it irreducible hernia.

The case as first seen presented a tumor in the left scrotum, of about the size of two adult fists, extending by a neck of two finger-breadths into the abdominal cavity through the inguinal canal. In addition to this mass there was at times an additional protrusion through the canal and into the upper part of the scrotum. The portion remaining in the scrotum was believed to be omentum, while that which descended last presented the characteristic indications of intestine, and it was also noticed that the symptoms of strangulation were only present at such times as this secondary protrusion took place. The gentleman was almost wholly disqualified for business, and quite willing to submit to an attempt at reduction. On the first day an hour was spent in making taxis, in the manner which I shall describe farther on, with very little apparent effect, except that the mass seemed softer and more movable within the sac. On the second day about a quarter of the mass was reduced after forty-five minutes' manipulation. Very little was accomplished on the third day, but on the fourth the entire protrusion, except the thickened hernial sac, was returned to the abdominal cavity, and a strong truss was so adjusted as to prevent its return to the scrotum. Some discomfort followed, which gradually increased to the pains of a sharp attack of colic. The truss was then removed, and the hernia allowed to redescend, when all disagreeable symptoms soon subsided. On the day following, the hernia was reduced without any great difficulty, and the truss was worn for four or five hours, and by the fourth or fifth day the hernia was retained twelve hours without unpleasant symptoms. From this time on the patient experienced no difficulty.

Case II.—January 15, 1883. J. M., laboring man, sixty years of age, referred to me by the late Professor A. C. Post for the relief of an enormous scrotal hernia of the left side of the size of a full-term fœtal head. The patient was unfitted for work. The hernia had existed ten years, and had not been fully reduced for seven years. By taxis a portion of the tumor was reduced, and its gurgling sound indicated that it was intestine which had returned. After about an hour's manipulation the larger part of the mass was returned to the abdomen. Remaining, however, was a piece of what was believed to be omentum, of about the length and size of two fingers, so firmly attached to the hernial sac, which also remained down, that no judicious effort could dislodge it.

No truss that the patient could tolerate would retain the hernia at this time when he was standing, so he was put into bed and a truss kept on. No unpleasant symptoms arose, and at the end of a week he was allowed to get up, the hernia being retained without great difficulty. The piece of omentum which was irreducible eventually disappeared under the influence of truss pressure.

Case III.—April 10, 1885. J. A., a robust milkman, forty-two years of age, referred to me by Dr. M. H. Williams for the relief of a large scrotal hernia, which was first noticed five years since. It had not been treated, and the patient had made no attempt to return it to the abdomen. During the past year he had been subject to severe attacks of colic, which had been relieved by the recumbent position and hot applications to the abdomen. These attacks have increased in severity and frequency, but not until quite recently has the patient suspected that they were in any way associated with his hernia, as no local pain had occurred. The tumor is in the left side of the scrotum, and larger than a man's fist; it is hard, unyielding, and connected by a broad pedicle with the abdominal cavity; the contents are believed to be mostly omentum, but loops of intestine, which are reducible, are also present.

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* Read before the New York Academy of Medicine, December 15, 1887.

Several attempts at reduction failed, although the tumor became softer and more movable than formerly, and, as the patient declined to be confined to bed without a positive promise that the hernia should be reduced, an operation was suggested and decided upon. As this was not to be done until the advent of cooler weather, he was instructed how to use taxis upon himself, and advised to continue it daily.

The time having arrived when arrangements for the operation were to be completed, a final attempt at reduction was made, and proved successful, the entire mass being returned to the abdominal cavity. During the time intervening between his first visit and the reduction of the hernia—two months—he had worn a truss which compressed the neck of the tumor, retained the reducible part of the hernia, and entirely relieved him from attacks of colic. After reduction the hernia was securely retained by a truss, and no disagreeable symptoms occurred.

One year later he believed himself cured, and wished to leave his truss off. He was strongly advised against this course, but, as I afterward learned, became very careless about wearing the support, and one morning, in jumping from his wagon while without it, forced the hernia down, and it became strangulated at once. Assisted by Dr. Stone and Dr. Williams, I operated upon him at eleven o'clock the same day. He made a rapid recovery.

Case IV.—January 20, 1886. C. H., mechanic, aged twenty-eight years, a man of unusual muscular development and good health. Seven years ago he noticed a tumor in the right groin; for a time it disappeared at night, but during the first year became fixed in its position, and has gradually increased in size up to the present time. The tumor now distends the right side of the scrotum to half the size of a child's head, and connects with the abdomen by a broad pedicle, extending through the inguinal canal. The greater bulk of the tumor is irreducible, but within this mass, which is thought to be omentum, is an additional reducible portion, believed to be intestine. Until recently the patient has suffered from the inconvenience of the bulky tumor only, but now he is having almost constant discomfort in the epigastric region and irregular attacks of colic.

This patient was put through the usual course of taxis, except that he was not put to bed, but without the hoped-for result. From the first the reducible part was retained by a truss, which compressed the neck of the tumor, and by this means he was relieved of the discomfort in the epigastrium, and from the attacks of colic.

Case V.—April 6, 1886. M. B., merchant, fifty-five years of age, referred to me by Dr. Lange, had a left-side scrotal hernia, as large as his two fists, of several years' duration. He was diabetic, and his general health is very poor. The hernia was very troublesome, and he was anxious to obtain relief before his intended departure for Europe. It was soon found that in this case manipulation could not be tolerated, nor could the patient wear a truss to retain a portion of the hernia which was reducible. An elastic suspensory bag was applied, which would not only support the weight of the tumor, but produce compression of its entire surface.

Case VI.—Mrs. M. S., sixty years of age, cook, applied at my clinic, September 20, 1886, for the relief of an enormous inguinal hernia. Six years previously she had found a tumor in the right groin, which had gradually increased to its present size, nearly as large as an infant's head. Attempts at reduction at this time produced no perceptible effect, and she was ordered to bed, and seen either by my clinical assistant, Dr. Stone, or myself each day for four successive days. On the third day Dr. Stone reduced a portion of the protrusion, and on the fourth I succeeded in reducing the remaining parts. No abdominal disturbance resulted from the return of the mass to the cavity of the abdomen.

Case VII.—February 19, 1887. W. P. S., electrotyper, thirty years of age, referred to me by Dr. William Hailes, of Albany. The patient had caused hernia ten years before by lifting, had worn no truss, and never attempted to return the hernia to the abdomen. It was a right-side entero-epiplocele. The intestine was reducible, with the characteristic gurgling sound, but a prolongation of omentum larger than a hen's egg occupied the scrotum and appeared closely adherent to the surrounding tissues. By careful manipulation it was somewhat loosened from its position in the scrotum, but the patient was not able to remain in the city long enough to decide whether or not reduction could be accomplished. A truss was therefore applied, and the protruding intestine retained. This patient was advised either to return for thorough trial at reduction, or to have an operation.

Case VIII.—March 4, 1887. H. S. F., merchant, aged twenty-eight, also referred by Dr. Hailes for advice respecting an irreducible scrotal hernia of the left side. It was a pear-shaped tumor of about the size of a goose-egg, entering the abdomen through the inguinal canal by a pedicle of about the size of the little finger. This had been irreducible for many years, and had been examined by a number of physicians, who pronounced it irreducible hernia. Upon the first day very little attempt was made to reduce the tumor, but it was, by very gentle manipulation, separated from the tissues in the immediate vicinity of the testicle. On the second day other adhesions were overcome in a similar manner, and on the third the entire protrusion was reduced. A suitable truss was applied, and a protrusion has never taken place since.

Case IX.—On June 18, 1887, I was asked by Dr. Griswold and Dr. Kemp to see Mr. L., aged fifty, who was supposed to have an irreducible hernia. The patient had had a reducible inguinal hernia of the right side for twenty-five years, which was controlled by an ordinary truss and gave him very little inconvenience. Owing to his truss getting out of repair, an increased protrusion had taken place, and it was found impossible to return it to the abdomen. No symptoms of strangulation had occurred, but there were at one time indications of a low grade of inflammation in the protruding omentum.

When I first saw the patient most of the active symptoms had subsided, but recent adhesions seemed to keep the omentum from returning to the abdomen. By carefully separating the adherent tissues, the hernia was again converted into a reducible one, which has since been retained within the abdomen by a suitable truss.

Case X.—December 3, 1887. Mrs. K. R., sixty years of age, sent to me by Dr. E. H. Gerow, of Poughkeepsie, for the relief of a large umbilical hernia of fifteen years' duration, which has not been reducible for the past ten years. The protruding mass was larger than the clinched fist and contained both omentum and bowel, the latter reducible and the former not. She had suffered symptoms of strangulation repeatedly, and was quite disabled by her hernia. She was ordered to bed on December 9th and seen twice daily for four successive days. By the fourth day the entire hernia was reduced and a suitable truss for its retention has been applied. Nothing but the most gentle manipulation was resorted to.

The patient was examined, both before and after the reduction, by Dr. W. Gill Wylie, of this city.

Of these ten patients, eight were males, two females. Three were sixty years of age; two, fifty; two over forty, and three about thirty. Nine had inguinal hernia, the contents being almost uniformly both omentum and intestine; one had umbilical hernia irreducible for over ten years. The duration has been in five, ten years or over; in four, over five years; in one, one year. The results have been: seven reductions, one abandoned on account of diabetic condition, and two failures.

The preceding ten cases were all, with one exception, old so-called irreducible hernias, while the following were of quite recent incarceration, and only the merest outlines will be given:

Case XI.—A male infant, six months old, with a large scrotal hernia, which had ordinarily been reducible, was brought with greatly distended scrotum and incarceration of twenty-four hours' duration. The bowels had moved naturally and the child did not seem to suffer pain. Cold applications were made, and on the following day the hernia returned to the abdomen while the child was asleep.

Case XII.—A man, thirty-five years of age, with a large scrotal hernia for many years, had an unusual protrusion while his truss was off, and incarceration occurred. There was no pain nor inflammatory action, and the bowels were not obstructed. Taxis proved of no avail. The patient was confined to bed, ice was applied, and in forty-eight hours the hernia was reduced.

Case XIII.—An infant, ten months old, had incarcerated hernia for two days before reduction could be accomplished. No urgent symptoms presented.

Case XIV.—A man, fifty years of age, had a large scrotal hernia which became incarcerated and was irreducible for twenty-four hours, after which time it again became reducible. No pain or inconvenience was experienced.

Case XV.—A man, eighty-four years of age, who had had a small scrotal hernia, forced down a piece of omentum which became incarcerated and could not by judicious taxis be returned to the abdomen. At first some inflammation was present, but this soon subsided. Systematic attempts at reduction were not deemed advisable owing to the extreme age of the patient. A support which prevents the protrusion of the bowel is now being worn.

I will now speak, as briefly as possible, of the manner of converting these so-called irreducible into reducible hernias. Taxis, as ordinarily used and described in the books, has not been resorted to to any great extent. I first see that the mass is freely movable within the sac, and then reduce the tumor more by compression than by taxis. If the tumor is large and tense, the first step is, if possible, to reduce a portion of it by compression and taxis combined. As a rule it will be found that a sufficient amount can in this manner be returned to relieve the pressure upon the interior of the sac.

This accomplished, the next step in the procedure is to separate the tumor from the vicinity of the testicle, if the hernia is scrotal and adherent in this region, gradually increasing the distance between them with the thumb and forefinger of one hand, while the testicle and scrotum are held down with the other—in other words, stripping the tumor from its connections from the bottom of the sac upward, gradually carrying it up over the external abdominal ring. Nothing but the gentlest manipulation is admissible in this undertaking, and haste would be very apt to result in actual harm. Expressions of pain from the patient are sure indications that too much force is being used. Frequently the yielding points of adhesion will be plainly felt beneath the fingers.

I have found it best to grasp the tumor with one hand, and make strong compression upon it without any forcible attempt to push it through the abdominal ring, while with the thumb and forefinger of the other hand I manipulate the neck of omentum which passes through the canal. This neck is kept as small as possible, and gradually worked back as it yields. No amount of force should at any time be used.

Deep abdominal pressure immediately above the inguinal region has also been found to aid in the return of the omentum. This is done by depressing the abdominal walls sharply with the ends of the fingers to the fullest extent possible, just above the internal abdominal ring. This, in some instances, will make quite strong traction upon the protruding omentum, and aid materially in its reduction.

In some instances, where reduction is prevented more from the bulk of the tumor than from adhesions formed, I have found that often repeated taxis will soften the tumor, so that by firm but gentle compression of the bulb-shaped mass it may be reduced.

To carry this out I have found it advisable, in some instances, to instruct the patient in self-applied taxis.

In most old chronic cases there will remain in the scrotum, after the reduction of the hernia, the hypertrophied hernial sac and the surrounding thickened tissue. This thickening, which in some cases is so great as to lead the inexperienced to believe that the hernia has not been completely reduced, requires no special attention. If the hernia is perfectly retained by a suitable truss, it will gradually disappear.

During these attempts at reduction it is better that the patient should be confined to bed, although I have succeeded in three or four of the cases reported without any confinement to bed. I have usually continued the attempts at reduction for from fifteen to forty-five minutes at a time, repeated once a day. No patient has been confined to bed more than a week, although I should not abandon a case within two weeks unless I saw some special reason for so doing.

Now, regarding the management of those cases where reduction can not be accomplished, my practice can be stated in a few words. If the intestine is reducible, I put a truss on with the pad compressing the neck of omentum. I have found not only that the omentum will tolerate this pressure without inflammatory action, but that atrophy of its substance is usually the result of strong truss pressure.

I have seen quite large prolongations of omentum disappear, slowly, it is true, under such pressure. The patient should also wear a strong suspensory support. I have had such a support made out of silk-covered rubber cord, woven to the size and shape of the tumor, so arranged that it gives equal compression to the entire surface.

It is important to distinguish the contents of a hernia that is irreducible. If palpation and percussion fail to reveal the presence of bowel, the history of the case may do so.

It has been my experience that the protrusion of even a large quantity of omentum into the scrotum is usually not attended by any amount of pain or discomfort, but that just as soon as a loop of bowel enters into the formation of the tumor the patient experiences a sense of discomfort in the epigastrium, and usually is subject to "colicky" pains throughout the abdomen. If the bowel is reducible, and can be retained by a suitable truss, these unpleasant symptoms are relieved; if, however, the bowel is not reducible, and the truss is applied, the trouble will most certainly be increased, and to persist in the treatment would be to subject the patient to the risk of strangulated hernia.

I have not, as yet, met with a case where the intestine was adherent, nor one where I could not so adjust a mechanical support as to be a relief to the patient, but I must confess that some cases have given me a great amount of trouble before success was attained.

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ON STRANGULATED HERNIA IN CHILDREN.*

By ARPAD G. GERSTER, M. D., etc.

Strangulated hernia in children is a very rare condition, and, although my experience therewith is not very great (only four cases having come to my notice), yet, on account of the rarity of the difficulty, it may be justifiable to take a little of the time of the Fellows in its consideration.

Regarding the formation of strangulated hernia in children there is nothing special to be said. I shall only direct your attention to that part of the treatment of these cases which differs from the treatment of strangulated hernia in adults. After sufficient time has been spent in attempts at reduction to prove that they are useless, the operation for strangulated hernia must be undertaken. After its performance a very important question—that of how to treat the wound—will arise. It is extremely difficult to prevent infection by fæces or urine, or both, and subsequent inflammation of the wound in small children, and I wish to dwell principally upon this part of the subject.

Most cases that occur in children take place in a congenital hernia. Usually the neck of the sac is not very wide. In one of my cases, however, it was very wide, and my colleague, Dr. Schottky, who had charge of another case, had to resort to an extraordinary method in order to prevent recurrence of the hernia. Under ordinary circumstances the first indication to be fulfilled after liberating the gut would be to occlude the abdominal opening, and thus prevent the inflammation, which is apt to develop from soiling of the wound by urinary and fæcal matters, from extending to the abdominal cavity.

Supposing the neck of the sac and the inguinal canal to have been occluded, the second question which arises is how to treat the external wound. It has been maintained by Dr. Weir that it would give greater security against the non-recurrence of hernia if, after the performance of the ordinary operation for strangulation, the external wound was not sutured, but was allowed to heal by granulation, the idea being that the formation of a dense and massive external scar would help in withstanding the intra-abdominal pressure. Regarding the cases of grown persons I do not share that opinion, but in cases of children I should certainly advocate an open treatment of the wound. This view is based on the fact that in all of the cases which have come under my observation, and in which the external wound was closed by suture, primary union did not take place. The wound became soiled, the margins fell apart, the stitches had to be removed, and the wound afterward healed by granulation. In view of these facts, I believe it is better, after occlusion of the sac and inguinal canal, not to unite the edges of the external wound, but to pack it with iodoform gauze, and treat it as an open wound in a manner similar to that employed in other wounds in the neighborhood of natural orifices—such as the nose, the anus, and the vagina.

In this manner we can assure antisepsis of the wound, and prevent those disagreeable consequences which we observe in cases of deep-seated septic inflammation. Packing the wound with iodoform gauze will form a secure bulwark against inflammation.

As to the histories of cases, one especially deserves attention because of an error in diagnosis. I think it is our duty to bring our errors before the profession, because they are generally most instructive. The case referred to was as follows:

A boy, aged two years and three months, was presented December 11, 1881, at the German Dispensary, with a fluctuating scrotal swelling on the left side which had existed some time. The tumor could not be reduced in size by pressure; it was translucent, and hydrocele was diagnosticated. To render the diagnosis sure, puncture with the hypodermic needle was made, and intestinal contents were withdrawn. Thereby we saw that we had to deal with a hernia which contained serum. It was an incarcerated hernia, the general symptoms of strangulation being absent. The child did not vomit; it had passed stools to within a short period before it was presented at the clinic. Nothing special was done, as there were no urgent symptoms, and the child was sent home. The next day all the symptoms of strangulation, with rather high fever, developed. Kelotomy was performed at the German Dispensary. In opening the sac the intestine was inadvertently incised because it was adherent to the anterior wall of the sac. It was found that local peritonitis, with extensive adhesions, due to the fæcal extravasation at the point of puncture with the hypodermic needle, had formed. The parts were well disinfected with a two-per-cent. solution of carbolic acid. The strangulated band was cut, the intestine replaced, and the wound sewed up, drained, and dressed. Primary union failed to follow, and the wound gaped on account of soiling by fæces and urine. Nevertheless, the healing of the wound progressed favorably, and on January 12, 1882, the patient was discharged cured.

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* Remarks made before the New York Academy of Medicine, December 15, 1887.

I would relate one other case, which occurred in the practice of my partner, Dr. Schottky:

A boy, one year old, was brought to the dispensary with strangulated hernia in 1883. The case was one of congenital hernia. An immediate operation was performed. It proved that external kelotomy was sufficient—that is, restricting bands situated outside of the sac were incised, after which the gut could be replaced easily. Dissection and separation of the sac was after this practiced in such a manner that the testicle, together with the sac, was freed from its scrotal attachments. Of course, the cord was also contained in it. These were turned outward, the sac being folded upon itself, and the skin was united over this mass. The reason for this procedure was the fact that the inguinal canal was very wide indeed, and a speedy relapse would have followed the operation if something had not been done to occlude the sac. The wound healed by granulation, and the patient ultimately recovered.

In these cases I should have preferred to incise the sac and perform the ordinary operation, because that would have been, I believe, followed by better results; or, if that had proved impossible on account of the difficulty of separating the cord from the sac, then I should, perhaps, have preferred to remove the testicle in the last case.

The third case presented nothing unusual. In the last case kelotomy was performed on account of a peculiar condition of things, which I will mention in a few words:

A child, two or three months old, was subject to attacks of eclampsia. At each of these attacks the gut protruded and became strangulated, and the physician had to administer chloroform in order to reduce the tumor. The gut having been reduced in this manner four times, I was called in consultation on the fifth occasion, and suggested, after reduction under anæsthesia, an operation for the obliteration of the sac. The operation was performed, and since that time no recurrence of the hernia has been noticed.

Axillary Adenitis.—"It is believed by M. Grancher," says the "Lancet," "that tubercular diseases of the lungs may, through the mediation of the pleura, infect the ganglia of the axilla. This peculiarity does not appear hitherto to have attracted much attention, and it is thought that the occurrence of such axillary adenitis may not be rare. The knowledge of these facts is regarded as having much importance, not only from a doctrinal point of view, but also from the standpoint of diagnosis, and M. Grancher advises that henceforth every case of phthisis should be examined for axillary swellings, and, conversely, that every case of axillary adenitis should be examined for the signs of pulmonary mischief."

The Urine in Tabes Dorsalis.—The "Lancet" says: "The following facts are set forth by MM. Livon and Alezais as the result of a series of researches on the urine of patients affected with an apyrexial disease of the cord—namely, tabes dorsalis: A tendency to diminution of the urea eliminated in the twenty-four hours; a diminution in the total daily discharge of phosphoric acid, with a tendency to proportional augmentation of the discharge of earthy phosphates; a great variation in the elimination of chlorine, with a bias in favor of hyperchloruria. Intravenous injections of tabetic urines appear to be sufficiently toxic in their action, since it has been found that from twelve to twenty-four cubic centimetres of urine per kilogramme of body weight of animals was sufficient to kill dogs."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 21, 1888.

IS LEPROSY CONTAGIOUS?

This question has gained fresh interest in this country from the appearance recently in Philadelphia of two cases of undoubted leprosy, and from the action which the Board of Health saw fit to take in the matter. The physician in attendance was fined $100 for failure to report the cases, as was stated in a former issue of this Journal. To any one who has seen much of leprosy, as the present writer has, it seems strange that there should be a division of opinion upon the contagiousness of the disease. It can only be accounted for on the supposition that even medical men frequently fail to discriminate between contagion and infection. Leprosy is certainly not infectious, but there is a mass of incontrovertible evidence to be found in medical literature which ought to place its contagiousness beyond question. In the Sandwich Islands, where the disease is endemic, the physicians have a strong belief in the communicability of the affection. The lepers (from 700 to 800) are separated upon an isolated area on one of the islands, and it is the firm conviction of all who have given the matter close study that, if the natives could be induced to work in harmony with the authorities, leprosy on the islands would in a short time be stamped out. The failure to eradicate the disease is due to the fear the natives have of being sent to the leper settlement and to the expedients to which they will resort in order to escape banishment to the leper colony. This colony is provided with medical attendants, who when first appointed are usually skeptical as to the contagiousness of the dire affection, but a few months' residence makes such converts of them that they will not go near a leper without having their hands protected by gloves. At the time of the writer's visit, a Belgian priest, M. Damien, had recently come to the settlement and had made himself beloved by all—Protestant, Catholic, and Pagan alike—by his impartial care and fatherly attention, which he even carried to the extent of nursing with his own hands the poor wretches when they were too ill to take care of themselves, and the number of attendants, who were themselves lepers, was insufficient. Since then he has contracted the loathsome malady, and it is sad to reflect that one who had truly given himself up to his high mission should have fallen a victim to the disease he so much dreaded, and the frightful and disgusting ravages of which he had constantly before his view. On the islands scarcely a year passes but one or two Europeans who have been living promiscuously in very close contact with the natives become subjects of leprosy.

In a recent number of the "British Medical Journal" a short review is given of the literature upon the question under consideration. A commission appointed by the Royal College of Physicians in 1867 gave expression to the belief that leprosy was not contagious. As a result of this followed the publication of several cases in which contagion seemed either probable or certain. Dr. Monro, in a work on the "Ætiology and History of Leprosy," quotes several authors of repute who have each recorded a case of a European infected by cohabitation with a leper woman. A study of the history of leprosy at Cape Breton shows that in that district the disease has been spread by intimate contact and by heredity. Mr. Fletcher, in an article published in the "Canadian Journal of the Medical Sciences," September, 1881, cites instances in that epidemic which show unmistakably that the disease was transmitted from one person to another. The history of leprosy in Louisiana, as related by Dr. White, corresponds in the main with the features of that furnished by the Cape Breton epidemic.

In the face of all this reliable evidence a reasonable doubt can scarcely be entertained of the contagiousness of leprosy. In its power of contagion leprosy may well, as it often has, be compared to syphilis, and, like that disease, it is frequently contracted through sexual intercourse, and is also just as frequently transmitted to the offspring.

ELECTRICITY IN THE EARLY DIAGNOSIS OF EXOPHTHALMIC GOÎTRE.

The recognition of exophthalmic goître in an advanced form is an easy matter even for a mere tyro in medicine, but to be able to detect its earliest manifestations, during the stage in which remedial measures are the most efficacious, often tries the skill of the acutest diagnostician. Then there are cases which present enlargement of the thyreoid gland associated with obscure nervous symptoms, and it is extremely important as well as difficult to decide whether the case is one requiring surgical or medical treatment. Such being the case, it is of great practical value to discover any sign or symptom which may serve as a means of differential diagnosis or as a sentinel to warn us of the insidious approach of the malady. It is not long since Charcot drew attention in a clinical lecture to the fact that in this disease the electrical resistance of the body was considerably diminished. "In every case of this disease examined by M. Vigouroux," said M. Charcot, "this condition has been present, and he has found it in certain cardiac affections, notably asystolism."

To test the accuracy and the value of this statement, Dr. R. Norris Wolfenden, of London, has undertaken a number of clinical experiments, the results of which he presents in a recent number of the "Practitioner." All that he found necessary for carrying out the experiments were a constant-cell battery, a resistance coil (of 1,000 ohms), a galvanometer graduated in milliampères, and a pair of electrodes. The "standard electrodes" recommended by De Watteville should be used, so as to insure uniformity in the method of examination, and the same points on the patient's body should always be taken, one electrode being applied, for example, to the nape of the neck and the other over the top of the sternum. Dr. Wolfenden examined a number of healthy persons in this manner, and he found that on an average the bodily resistance ranged from 4,000 to 5,000 ohms. But in eight cases in which exophthalmic goître was well marked it was only between 500 and 700 ohms, and in twelve other cases presenting unmistakable early symptoms of the disease it ranged between 1,000 and 1,300 ohms. Consequently he attaches great value to the sign, and quotes Charcot's remark that cases of the undeveloped form would sometimes be very difficult to diagnosticate were it not for the palpitation, the tremor, and the diminution of the electrical resistance which reveal their true nature. Wolfenden emphasizes the fact that in ordinary goître the electrical resistance is not diminished; he has never found it less than 5,000 ohms, and in one case of malignant disease it was as high as 5,000 ohms. He gives the results of his examinations in cases of hemiplegia, epilepsy, cerebral softening, paraplegia, general paralysis, and hystero-epilepsy; in all of them, except one case of general paralysis, the resistance was diminished—most decidedly in epilepsy and hemiplegia, to as low a point as 1,300 ohms in one instance.

The explanation of the lessened electrical resistance of the body in exophthalmic goître is not very clear, but Wolfenden suggests that it may be connected with the dilatation of the cutaneous capillaries which obtains, rendering the skin saturated with liquid and thus reducing the thickness of the ill-conducting epidermis to the minimum. Like Silva, he has noticed an increase of the electrical resistance coincident with improvement in patients under treatment. If the facts noted by the different observers mentioned turn out to be at all constant, evidently electrical investigation will prove to have added another to the many aids it has put into the hands of clinicians.

MINOR PARAGRAPHS.

LARGE DOSES OF OLIVE-OIL IN THE TREATMENT OF HEPATIC COLIC.

In reference to the note which was published under this title in our last issue, a well-known Ohio physician, deservedly one of the most esteemed and influential members of the American profession, writes to us that he has never had a long-continued case of gall-stones in which the treatment with large doses of olive-oil (half a pint, instead of twelve tablespoonfuls) has not been suggested or urged by some officious neighbor. On two occasions, he says, patients have come to him in triumph after taking such a dose, bringing a dozen or twenty round bodies looking very much like gall-stones, but examination has shown them to consist of stearin. "Now is it possible," our correspondent asks, "that a physician, the author of the paragraph alluded to, could have been deceived in this way? It would seem so from the fact that these calculi (?) were of 'soft consistence' and six of them were of 'the size of an olive' and yet 'passed without pain'!"

THE RETENTION OF A TAMPON IN THE VAGINA FOR TWENTY-NINE YEARS.

In the January number of the "American Journal of Obstetrics," Dr. F. E. Beckwith, of New Haven, gives an account of the case of an unmarried woman, seventy years old, who was admitted into the New Haven Hospital last June, in a very weak condition from long-continued diarrhœa and tenesmus. In a few days the nurse saw a foreign body within the vagina, and the patient was transferred to the gynæcological service, where Dr. Beckwith found that the foreign body was a plug of coarse cotton or woolen stuff contained within a shell of calcareous deposit, the whole amounting to several ounces, and giving out an abominable odor. Free hæmorrhage attended attempts at its removal, so that the poor creature had to be relieved of her plug at different sittings. The neck of the uterus and the vault of the vagina were then found to be in a state of cancerous degeneration, and the patient shortly died of progressive asthenia. It was ascertained that the tampon was inserted by a midwife in Germany, twenty-nine years before, and that the patient did not again report to her or consult a physician. The mass must speedily have become offensive, and it is not easy to understand how the patient could have remained ignorant of its presence; yet such things do happen now and then, and they teach the lesson that nothing of the sort should ever be left in the vagina without something projecting externally to call attention to its existence.

THE "LANCET" AND THE "BRITISH MEDICAL JOURNAL."

The "British Medical Journal" comes out every week with a chip on its shoulder, so to speak, in the shape of some such announcement as this: "The average issue of the 'British Medical Journal' now amounts to over 14,500 copies weekly, which will be found, tested, to show an excess of considerably more than a quarter of a million copies annually over that of any other medical journal in Great Britain." The limit within which the "Lancet" can stand this in silence seems to have been reached. It now says: "The subscription to the 'Lancet' is larger by many thousands than that enjoyed by any other medical journal; there is also this significant condition to be credited to its account, that, notwithstanding its price is higher than that of any other medical journal, every copy is directly purchased, which is a very different matter from the mere distribution of a journal as the organ of an association." It then goes on to state its impression that it is "read by five sixths of the entire profession at home and abroad." There are journals in this country that continually boast of their circulation, but their contemporaries contrive to maintain their equanimity, and we think the "Lancet" might rely on its readers' common sense to take boasting at its proper value, especially as it is itself so handsomely sustained by those who subscribe to it "voluntarily and solely because they wish to read it."

AMERICAN PORK AND FRENCH WINES.

Our consul at Havre has called the attention of the Chicago Board of Trade to the continued prohibition of American pork and other products into France, and has expressed the opinion that it would please the people of Havre if Congress were to take the matter up and threaten retaliatory legislation in the shape of a prohibition of the importation of French wines. Retaliatory legislation is usually to be deprecated, except under extreme provocation, but we think Congress might adopt the course indicated on grounds quite consistent with our national policy and thoroughly in consonance with equity.

THE VACANCY IN THE FISH COMMISSION.

Among the persons mentioned as likely to be appointed to fill the vacancy caused by Professor Baird's death is Dr. Jerome H. Kidder. Although Dr. Kidder has stated that he does not wish to be considered a candidate for the position, and naturally feels annoyed that in certain newspaper correspondence he has been made to figure as a candidate, it is none the less to be wished that the choice may fall upon him. His career as a medical officer in the navy, as the naturalist of the transit-of-Venus expedition, and more recently in the work of the Fish Commission itself, has been such as amply to guarantee his earnestness and efficiency in any public position calling for a man of scientific training, and we believe that his selection for the commissionership in question would prove peculiarly acceptable to the medical profession.

FACTITIOUS FRENCH BRANDY.

The "St. James's Gazette," of London, recently alluded to certain information from the British vice-counsel at La Rochelle as to the well-known industry of manufacturing "brandy" in France from potato spirit imported into that country from Germany. It seems that a London firm — not, the "Gazette" hopes, "one of the respectable ones"—is engaged in the business. This is sufficiently lamentable, but still more so is it to find a journal of the "Gazette's" presumed influence saying of such a vile product that "no doubt it is wholesome enough." Palatable it may be, but wholesome it most certainly is not. If only the reform advocated by the "Gazette" were to be carried out—that of putting this factitious French brandy on the market under its proper name and at a low price—its ruinous work would be all the greater, for it would then be consumed by the poor, who now have to content themselves with spirits that, we may hope, are less injurious.

A NEW JOURNAL OF GENITO-URINARY DISEASES.

We have received the first number of the "Gaceta de las Enfermedades de los Órganos Génito-urinarios," a bi-monthly journal of thirty-two pages, edited and published by Dr. Alejandro Settier, of Madrid. The opening article, by the editor, is on "Calculi of the Prostate and of the Prostatic Urethra." It is followed by an article by Dr. Thomas Oliver, of Newcastle, on "The Relation between Lead Poisoning and Renal Inflammations." Clinical histories, abstracts, and bibliographical notices complete the number. The new journal is attractive in appearance, and bids fair, we should say, to prove of distinct advantage to the profession in Spanish-speaking countries.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 17, 1888:

DISEASES.	Week ending Jan. 10.		Week ending Jan. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	10	5	7	2
Scarlet fever	164	27	144	20
Cerebro-spinal meningitis	2	2	2	1
Measles	48	3	39	2
Diphtheria	210	57	167	57
Small-pox	5	0	4	0

The Medical Society of the State of New York.—The eighty-second annual meeting will be held at Albany on Tuesday, Wednesday, and Thursday, February 7, 8, and 9, 1888. The programme includes the following papers and discussions: The President's Inaugural Address, by Dr. A. L. Loomis, of New York; "Idiosyncrasy," by Dr. R. Hopkins, of Buffalo; "The Use of Alcohol in certain Forms of Fever," by Dr. H. Kretzschmar, of Brooklyn; "Neuro-therapeutic Memoranda," by Dr. J. L. Corning, of New York; "Reflex Nervous Disturbances," by Dr. W. E. Ford, of Utica; a paper by Dr. W. S. Ely, of Rochester (title to be announced); "Notes on the Treatment of Lupus," by Dr. H. G. Piffard, of New York; "The Extraction of Cataract without Iridectomy, with a Short Report of 100 Successive Cases," by Dr. H. Knapp, of New York; "Demonstration of New Urethral and Bladder Instruments," by Dr. F. N. Otis, of New York; "A Case of Forward Dislocation of the Ulna," by Dr. S. Wight, of Brooklyn; "Hernia," by Dr. W. B. de Garmo, of New York; "The Removal of Laryngeal Growths with O'Dwyer's Snare, in Conjunction with Intubation of the Larynx," by Dr. C. C. Rice, of New York; "The Action of Caustic Applications on the Nasal Mucous Membrane," by Dr. F. H. Bosworth, of New York; a discussion on "Acute Bright's Disease," in which the "Pathology and Clinical History" will be discussed by Dr. F. Delafield, of New York; "Acute Bright's Disease in Children," by Dr A. Jacobi, of New York; "Changes in the Eye in Acute Bright's Disease," by Dr. D. B. St. John Roosa, of New York; "Cardiac Changes in Acute Bright's Disease," by Dr. R. Van Santvoord, of New York; "Acute Bright's Disease in the Puerperal State," by Dr. Fordyce Baker, of New York, and Dr. C. Jewett, of Brooklyn, and "Treatment," by Dr. W. S. Ely, of Rochester; "Intubation of the Larynx of an Adult, Exhibition of New Instruments," by Dr. J. O'Dwyer, of New York; "Bovine Tuberculosis," by Dr. E. F. Brush, of Mount Vernon; a discussion on Salpingitis, in which Dr. W. Goodell, of Philadelphia, and Dr. P. F. Mundé, of New York, will discuss the "Pathology and Symptoms," Dr. C. C. Lee, of New York, "The Causes," Dr. M. D. Mann, of Buffalo, "Differential Diagnosis," Dr. G. Seymour, of Utica, "Prognosis," Dr. F. A. Castle, of New York, "Medical Treatment," Dr. W. M. Polk, of New York, "Surgical Treatment," and Dr. W. G. Wylie, of New York, and Dr. A. Vander Veer, of Albany, "The Results of Operative Treatment"; "The Management of Pelvic Inflammations in Women," by Dr. W. W. Potter, of Buffalo; "The Influence of Obesity in Young Women upon the Menstrual and Reproductive Functions," by Dr. A. F. Currier, of New York; "Vaginal Hysterectomy, with a Report of Eight Cases," by Dr. W. M. Polk, of New York; "The Treatment of Complete Procidentia of the Womb by Alexander's Operation," by Dr. C. C. Lee, of New York; "The Distinction between Functional and Organic Disease of the Nervous System," by W. H. Thomson, of New York; "The Dietetic Treatment of the Gouty Diathesis," by Dr. W. H. Draper, of New York; "Cardiac Medication," by Dr. E. V. Stoddard, of Rochester; "The Treatment of Penetrating Gun-shot Wounds of the Cranium," by Dr. J. D. Bryant, of New York; "Demonstrations with the Induction Balance and Telephonic Probe," by Dr. J. H. Girdner, of New York; "Extensive Compound Cranial Fracture, Considerable Loss of Brain Substance complicated with Fungus Cerebri; Recovery," by Dr. A. R. Matheson, of Brooklyn; "The Interdependence of Local, State, and National Health Boards; a Plea for their Unification," by Dr. C. Stover, of New York; a discussion on "Intestinal Obstruction, What constitutes Intestinal Obstruction? its Anatomical Relations," by Dr. L. A. Stimson, of New York; "How long should Cases be treated Medically?" by Dr. W. C. Wey, of Elmira; "When should Operative Measures be resorted to?" by Dr. A. Vander Veer, of Albany; "The Choice of Operations," by Dr. R. Park, of Buffalo; "How should the Operation be Conducted?" by Dr. R. F. Weir, of New York; "Results obtained by Operative Interference," by Dr. B. F. Curtis, of New York; a discussion on the "Treatment of Tubercular Affections of Joints"—"Mechanical," by Dr. A. M. Phelps and Dr. V. P. Gibney, of New York, "Surgical," by Dr. A. G. Gerster, of New York; the President's Address; "Biographical Sketch of the late Dr. Edwin R. Hutchinson, of Utica," by Dr. T. R. Pooley, of New York; "The Surgical Treatment of Skin Diseases," by Dr. P. A. Morrow, of New York; Remarks on the "Chian Turpentine Treatment of Cancer," by Dr. D. Lewis, of New York; "The Frequent Dependence of Persistent and So-called Congestive Headaches upon Abnormal Conditions of the Nasal Passages," by Dr. J. O. Roe, of Rochester. The annual dinner will be served at the Delavan House at ten o'clock on the evening of the second day.

The Alumni Association of the Woman's Hospital in the State of New York.—The annual meeting of this society, held at the Academy of Medicine on Wednesday of this week, under the presidency of Dr. W. H. Baker, of Boston, was of a character to indicate its continued and even increased activity. Judged by the value of the papers read and by the interest displayed in the discussions, the meeting was the most successful in the history of the organization. Dr. George T. Harrison was elected president for the ensuing year, and Dr. Ernest F. Tucker secretary.

The New York Ophthalmological Society.—At the recent annual meeting, officers for the coming year were elected as follows: President, Dr. John D. Rushmore; vice-president, Dr. W. Oliver Moore; secretary, Dr. W. S. Dennett.

The German Hospital and Dispensary.—We are glad to learn that a concert given lately by the Liederkranz and Arion societies in aid of this excellent institution was so well attended as to yield receipts that will add handsomely to its funds.

Small-pox in Sheffield, England.—Press dispatches state that the outbreak of small-pox in Sheffield is the most serious that has occurred there for many years. It is gratifying to learn that the immense preponderance of cases among the unvaccinated, who constitute but a small fraction of the population, seems to be having its due effect in brushing away the vagaries inculcated by the anti-vaccinationists.

The late Dr. Adams C. Hoffman.—At the regular quarterly meeting of the District Medical Society, for the County of Hudson, held in Jersey City, N. J., December 6, 1887, the following preamble and resolutions were unanimously adopted:

Whereas, It has pleased an All-wise Providence to remove our brother and co-worker, Dr. Adams C. Hoffman, from the scene of his earthly labors, therefore be it

Resolved, That while we bow with humble submission to the will of the Most High, we feel the loss of a sincere friend and a competent physician.

Resolved, That this society tender its heartfelt sympathies to the friends and relatives of the deceased in this their sad affliction.

Resolved, That a copy of these resolutions be presented to the bereaved family, and that each of the city papers and the "Medical Record" and the "New York Medical Journal" be furnished a copy for publication.

William Perry Watson, M. D.,
[Signed] I. N. Quimby, M. D., *Committee.*
F. D. Gray, M. D.,

The New York Maternity Hospital.—Dr. Henry C. Coe has been appointed an obstetric surgeon to the hospital, succeeding Dr. E. L. Partridge, resigned.

The French Academy of Medicine Prizes.—According to the "Gazette hebdomadaire de médecine et de chirurgie," the following are among the subjects announced for the year 1889: *The Academy prize* (1,000 francs).—The physiology of the pneumogastric nerve. *The Capuron prize* (1,000 francs).—The various methods and processes of performing the Cæsarean operation. *The Civrieux prize* (800 francs).—Sensory disturbances in tabes. *The Daudet prize* (1,000 francs).—Congenital neoplasms. *The Godard prize* (1,000 francs), to be awarded to the author of the best essay on external pathology. *The Louis prize* (400 francs).—Antithermic medication. *The Meynot prize* (2,600 francs), to be awarded to the author of the best essay on diseases of the eye. *The Portal prize* (600 francs).—The pathological anatomy and physiology of the suprarenal capsules. *The Pourat prize* (900 francs).—The experimental determination of the mode of contraction and the innervation of the lymphatic vessels.

For the year 1890 the following subjects are announced: *The Academy prize* (1,000 francs).—Alopecia. *The Amussat prize* (800 francs), to be awarded to the author of that work, or of those researches, based at once on anatomy and on experiment, which may appear to have accomplished or furthered the most important advance in surgical therapeutics. *The Capuron prize* (1,000 francs).—Habitual abortion, and the means of preventing it. *The Civrieux prize* (800 francs).—The neuritides. *The Daudet prize* (1,000 francs).—Leukæmia. *The Falret prize* (1,000 francs).—Diathetic insanities. *The Ernest Godard prize* (1,000 francs), for the best work on internal pathology. *The Herpin prize* (1,200 francs).—The abortive treatment of anthrax. *The Lefèvre prize* (1,800 francs).—Melancholia. *The Perron prize* (3,800 francs), for the essay most contributory to the progress of medicine. *The Portal prize* (600 francs).—Perforating disease of the foot. *The Pourat prize* (900 francs).—A precise experimental solution of the question as to the existence of one or more respiratory centers. *The Stanski prize* (1,800 francs), to be awarded to whoever best demonstrates the existence or non-existence of miasmatic contagion by infection or by remote contagion.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 1 to January 14, 1888:*

Cleary, P. J. A., Major and Surgeon. Granted leave of absence for one month. S. O. 138, Department of Arizona, December 25, 1887.

Ebert, R. G., Captain and Assistant Surgeon. Ordered from Fort Custer, Montana, to Fort Pembina, Dakota Territory. S. O. 301, A. G. O., December 30, 1887.

Appel, A. H., Captain and Assistant Surgeon. Granted leave of absence for twenty days. S. O. 1, Department of the Missouri, January 3, 1888.

Ewing, C. B., First Lieutenant and Assistant Surgeon. Granted one month's leave. S. O. 137, Department of the Missouri, December 27, 1887.

Banister, William B., First Lieutenant and Assistant Surgeon. Ordered from Fort Lowell, Arizona, to Fort Wingate, New Mexico. S. O. 3, A. G. O., January 5, 1888.

Tesson, Louis S., Captain and Assistant Surgeon. Relieved from duty at Headquarters, Division of the Missouri, and as examiner of recruits at Chicago, Ill., and ordered for duty as Post Surgeon at Watervliet Arsenal, N. Y., relieving Captain Henry G. Burton, Assistant Surgeon. S. O. 5, A. G. O., January 7, 1888.

Barnett, Richards, Captain and Assistant Surgeon. Ordered from further duty in Division of the Atlantic, to duty at Fort Riley, Kansas, to take effect at the expiration of his present sick leave. S. O. 5, A. G. O., January 7, 1888.

Society Meetings for the Coming Week:

Monday, *January 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement.

Tuesday, *January 24th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Putnam (semi-annual), N. Y.

Wednesday, *January 25th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Philadelphia County Medical Society (conversational); Berkshire, Mass., District Medical Society (Pittsfield); Middlesex, Mass., North District Medical Society (Lowell); Gloucester, N. J., County Medical Society (quarterly).

Thursday, *January 26th:* New York Academy of Medicine (section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland).

Friday, *January 27th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *January 28th:* New York Medical and Surgical Society (private—annual).

OBITUARY NOTES.

Samuel A. Purdy, M. D., died on Thursday, the 12th inst. at his house in Morrisania. The deceased was in the seventy-sixth year of his age. He was a graduate of the College of Physicians and Surgeons, of the class of 1834. At the time of his death he was a member of the Academy of Medicine and of the Medical Society of the County of New York.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of December 15, 1887.

The President, Dr. A. Jacobi, in the Chair.

A Discussion on Hernia.—Dr. T. H. Burchard read a paper entitled "The Modern Treatment of Strangulated Hernia" (see page 61); Dr. R. F. Weir followed with remarks on the question, "How should the Sac be treated in a Kelotomy?" (see page 65); Dr. W. B. De Garmo read a paper entitled "The Conservative Treatment of Irreducible and Incarcerated Hernia" (see page 68); and Dr. A. G. Gerster spoke on "Strangulated Hernia in Children" (see page 71).

Dr. Gibney said, regarding strangulated hernia in children, that he could not recall in a long experience a single case in which the hernia could not be reduced under chloroform. If it could be reduced it could afterward be treated satisfactorily with a truss. There were conditions which made kelotomy more serious in children than in adults.

Dr. Jones demonstrated Macewen's method on a manikin.

Dr. Wylie had found that cicatricial tissue in the line of a laparotomy wound might be strong, and afford effectual resistance to intra-abdominal pressure for a time, but with age the cicatrix thinned out, and left only a thin, bluish membrane, which invited hernia. For this reason he now used as small a drainage-tube as was consistent with the necessities of the case.

Dr. Weir had had only two cases of strangulated hernia in children. In one he had effected reduction in a manner which to him was novel. By introducing the finger into the rectum he found that in a child under two years of age he could sweep it over the whole inguinal region, and thus with the aid of the other hand over the abdomen he was able to hook down the loop of strangulated intestine. He might incidentally mention the fact that hernia occurring at the site of an operation for peritiphylitis was exceedingly rare. He had never seen such a case.

Dr. FRUITNIGHT mentioned a case of strangulated hernia in a child in which there was absence of the usual symptoms of that affection as it existed in the adult. He asked if such was the usual history.

Dr. GERSTER said that there was usually a history of vomiting, suppression of stools, and the other symptoms that were present in the adult. In one of his cases any attempt at taxis it was thought would be dangerous, and at the operation the appearance of the parts showed that these fears were well founded.

Dr. DE GARMO had never met with strangulated hernia in children, but he had seen a number of cases of incarcerated hernia in this class of subjects. He did not attempt taxis, but sent the parents home with instructions to bring the patient the next day, when he always found the tumor reduced.

Dr. GERSTER wished to make a few remarks on the paper read by Dr. Burchard. They would be directed principally against one of his recommendations, which had not been made in a direct manner, but made nevertheless in such a way that he could not overlook it. It was known that the dangers of kelotomy when performed on a subject whose gut was in a healthy condition were very slight, and were confined almost exclusively to the use of a general anæsthetic and the consequences thereof. In cases in which there was necrosis of the gut, or in which necrosis would take place, although it might not yet be recognized as such, if the strangulated portion was treated in the manner recommended by the older writers—he would mention only the classical method of invaginating the sac with the finger or the introduction of a probe such as Dr. Burchard had exhibited—the patient would, to say the least, be subjected to a very dangerous procedure. Every one who had seen the necrosed, brittle, soft gut, which was likely to break down at the slightest touch or traction, would admit that the insertion of an instrument like this probe alongside of it was apt to do harm. If the finger was inserted, and the probe-pointed knife recommended for kelotomy was introduced, the same accident might happen, and one of the chief points in antiseptic kelotomy would thereby be violated. The contents of the gut would escape and enter the abdominal cavity. The much safer method in cases in which there was a strong suspicion that the gut was diseased was not to liberate the gut by the classical method of invagination and incision from within outward, but rather to cut down from without inward, dividing layer by layer, cutting through all the constricting bands, until finally the gut was exposed without having been touched. Then it could be withdrawn and examined with the greatest delicacy, thereby avoiding laceration. But, if the other method was adopted, it would be necessary to make some traction upon the gut to free it from adhesions, and there was great danger, on account of its having lost its normal cohesive power, of tearing it. A further danger which would be avoided by an open incision was that of hæmorrhage—hæmorrhage from division of the epigastric artery, which in a case described by Dr. Burchard lay in the line of incision.

Dr. BURCHARD said the probe should be handled with great delicacy, and in none of the few cases in which he had employed it had any bad result occurred. In a certain class of cases it seemed necessary to use that instrument.

Dr. GERSTER, speaking on Dr. De Garmo's paper, said that, of twenty-six cases of kelotomy for strangulated and non-strangulated hernia, he had found adhesion in the neighborhood of the testicle in only one, a case of congenital hernia in a grown person. In the other cases there was no adhesion at the bottom of the sac, the adhesion being only in the vicinity of the neck, where inflammatory changes had taken place as a result of wearing a truss. He asked Dr. De Garmo whether he was sure that in his cases there had been adhesions in the bottom of the sac in the vicinity of the testicle.

Dr. DE GARMO replied that in only one had it appeared that there was adhesion in the vicinity of the testicle.

NEW YORK SURGICAL SOCIETY.

Meeting of December 14, 1887.

The President, Dr. LEWIS A. STIMSON, in the Chair.

Nephro-lithotomy.—Dr. LANGE presented a patient with the following history: John S., aged twenty-one, was admitted into the German Hospital on August 24, 1887. About three years before, he had passed a small stone with his urine. Its passage was accompanied with much pain and some hæmaturia, and preceded by a good deal of pain in the right lumbar region, lasting for eight days. His health subsequently continued good for two years, when he began (about a year ago) to suffer again with pain in the right lumbar region, which was sometimes so severe that, as he said, "it bent him to the right." The urine was usually cloudy, and sometimes contained blood. In May his pain became more continuous, and in June he noticed a swelling in the right lumbar region, which gradually increased, until it had reached the size of a large apple at the time of his admission.

On August 27th nephro-lithotomy was performed by the lumbar method. The kidney was found to be imbedded in a very thick and resistant layer of tissue, which it was necessary to divide in order to gain access to the organ. It was impossible to find a direct communication between the abscess and the pelvis of the kidney or the kidney itself. The abscess extended downward to the pelvis in the direction of the ureter. In the lower portion of the kidney a soft spot was detected by the touch, which was incised. A stone of irregular shape, about 3 ctm. long and from 1 to 2 ctm. in width, flattened, and having sharp edges, was extracted. Examination showed a small fractured surface. On exploring the cavity, another small concretion was found, which, however, did not correspond in size to the one sought for. The organ was carefully palpated, but it showed everywhere a normal consistence; it was not possible by puncturing it to discover another stone. The patient made a somewhat slow recovery on account of his poor condition, but he now felt quite well and his general health was good. His urine still contained some pus, and it was apprehended that another calculus might still be present in the kidney. As the rest of the organ seemed to be normal, the speaker could not resolve to sacrifice it entirely. The calculi were composed of uric acid; unfortunately, in passing through various hands, they had been lost.

In reply to questions by the president, Dr. LANGE stated that the wound had closed by granulation, no sutures having been used. There had been no infiltration of urine.

Removal of Nearly the Entire Clavicle; Reproduction of the Bone.—Dr. BULL presented a patient upon whom he had operated two months previously at the New York Hospital. The man had syphilitic necrosis of the left clavicle. There was a large fungous mass at the inner extremity of the clavicle, involving the articulation, which resembled sarcoma, but improved under antisyphilitic treatment, which was continued for two months. At the operation three fourths of the bone were removed. It was now two months since the operation, and the wound was healed except for a small superficial ulcer, the contour of the shoulder was perfect, and the motions of the arm were satisfactory. The tissues over the site of the portion removed were still too much thickened and indurated to make any bony outline perceptible or palpable on examination; but, from the preservation of the outline of the shoulder and the function of the arm, it was fair to assume that the bone was being actively reproduced. The arm had been kept quiet with adhesive-plaster dressing for six weeks after the operation.

The operation had been a very simple one, as the necrosed bone lay loose in the sheath of periosteum. An incision was made over the bone, the soft parts were reflected with a periosteal elevator, and the bone was lifted out and divided with a key-hole saw. This was the second case in which the speaker had performed this operation. In the first he had removed the inner half of the clavicle for sarcoma, no effort being made to preserve the periosteum. There was a very slight deformity in this case, due to falling forward of the shoulder. A dense fibrous tissue took the place of the bone, and the muscular power of the arm and its movements were perfectly satisfactory.

Dr. Wyeth said that he had removed the inner three inches, the outer one inch, and the upper half of the middle segment of the clavicle in a boy aged fourteen, leaving only one inch of the bone in position. The bone was reproduced, and now, after six years, the function of the arm was perfect. The operation was performed for traumatic osteitis. The most interesting feature in the case was a fracture of the new bone that occurred during the healing process. The patient was simply kept in bed without any special apparatus being used.

Dr. Sands said that, according to his recollection, the elder Dr. Mott had removed the clavicle for osteo-sarcoma. There was the greatest possible difference, as regarded the difficulty of the operation, between removing simple necrosed bone and bone tumors. Surgeons had boasted of exsecting the entire upper jaw, but nothing could be easier if the bone was separated from the periosteum by necrosis. But when a tumor was present and the mass was very adherent, the procedure was difficult. The speaker had found great difficulty in removing a small portion of the lower jaw for a tumor, and none at all in detaching more than one half the jaw when necrosed. Since the periosteum was spared in the latter case, the bone was more likely to be reproduced.

Dr. Bull said that, in the case reported by him, antisyphilitic treatment had been pursued from before the operation until the present time, the patient having taken as much as thirty grains of iodide of potassium thrice daily. He was surprised at the rapid restoration of function in the arm, and attributed it to the presence of the thickened periosteum.

The President thought that the inner end of the outer fragment moved slightly, showing that union was not perfect.

Dr. Bull said that the man from whom it was said that the elder Dr. Mott had removed the entire clavicle had died recently, and it had been found, on making a post-mortem, that about one fourth of the outer end of the clavicle remained intact, so that this was not a true case of total excision. There were, however, a number of authentic cases on record.

Dr. McBurney thought that the portion of the clavicle found might have been reproduced if a portion of the periosteum was preserved.

The President did not believe that much care was exercised to save the periosteum by the early surgeons.

Dr. McBurney said that he had seen Dr. Valentine Mott, Jr., remove the entire clavicle for syphilitic necrosis. The elder Mott had performed the same operation, though with greater difficulty on account of the profuse hæmorrhage. In the latter instance the patient was nearly forty, and the bone was reproduced.

The President said that in the days of the elder Mott it was unlikely that any attempt was made to preserve the periosteum.

Acetabular Coxitis.—Dr. F. Lange read a paper on this subject (to be published hereafter).

Dr. Wyeth said that many operations similar to that described by the author had been performed by McNamara, of Glasgow. The speaker had operated only once, upon a little boy who was supposed to have osteitis of the head of the femur. He cut through the trochanter and bored into the head of the femur and introduced a drainage-tube, but it was impossible to tell if there was any tuberculous material among the *débris*. The patient was neither better nor worse after the operation.

Dr. Gerster said that the idea of attacking tuberculous foci located in bone near one or another joint had in it much to tempt surgeons. Luecke had proposed a method of diagnosticating such foci in the vicinity of joints. Kocher had reported a number of cases in which he had cured such cheesy foci by ignipuncture. It was very difficult to locate them. The treatment proposed by the author was quite rational, provided they could be found. When a cold abscess existed, it would be easy to adopt this treatment, but the joint was usually invaded before the circumarticular abscess had formed. He hoped that our methods of diagnosticating such foci would become more exact; at any rate, it was frequently legitimate to operate and to search for them.

Dr. Lange said that he was under the impression that cases of hip disease were more likely to be of acetabular origin when, while other symptoms were present, the motions of the joint remained comparatively free. There had been in the cases he had reported a contrast between the extent of the disease and the severity of the symptoms. Complete fixation was never present; fixation at an early stage of the disease would point more probably to some primary lesion in the head or neck of the femur. He thought that pain in the knee was absent in the cases reported.

Dr. Sands said that there were two reasons why operations on tuberculous hip joints were of doubtful expediency. In the first place, the joint was so deeply seated and so covered by soft parts that it was often doubtful if the disease would be thoroughly removed. It was a comparatively simple matter to expose the knee or the elbow joint, and to a less degree the shoulder and the ankle, but with the hip it was different. He had performed and witnessed many operations upon the latter joint in which it seemed as if the disease had not been entirely extirpated. Until recently writers on this subject had lost sight of the fact that the soft parts might be extensively infiltrated. Another objection was that spontaneous cure of hip disease was more frequent than in the case of other large joints, such as the knee, white swelling of which was rarely cured. Children with hip disease, if placed under proper hygienic conditions, often recovered without an operation. These remarks, the speaker explained, were not intended as an argument against the operation described by the reader of the paper, which was in itself entirely rational.

Periosteal Sarcoma of the Tibia in a Child aged Nine Months; Amputation of the Thigh.—Dr. Hartley presented a specimen for Dr. Sands, and stated that the tumor had only been noticed four weeks and a half before the child was admitted into the Roosevelt Hospital. The family history was negative. The child had had no pain, but began to lose flesh two weeks before admission. The thigh was amputated on December 10th. Examination of the growth showed that it was a mixed round-celled and spindle-celled sarcoma springing from the periosteum.

Dr. Sands added that the child had been brought to him two weeks before with a note from Dr. Beattie, of this city, who said that he had opened a supposed abscess on its leg. Dr. Sands thought at first that the case was one of tuberculous disease, and asked Dr. Hartley to lay open the sinus. Examination of the material removed showed that it was sarcomatous. When he saw the child again, at the time of the operation, the tumor had increased in size considerably. He had never before seen a case of sarcoma of the leg in so young a child. The operation was performed on Saturday, the flaps being approximated by means of catgut sutures, no drainage-tube being used. On Monday the temperature rose to 104° F., and the dressings were removed, but the wound presented a healthy appearance. The child was quite restless. The temperature fell to 101°, and subsequently became normal.

In reply to a question by Dr. McBurney, Dr. Sands said that he would not necessarily look for an hereditary taint in this case.

Papilloma of the Bladder; Removal by Suprapubic Cystotomy.—Dr. Lange presented a specimen of papilloma, and read the following history: Mr. S., aged sixty-four, previously healthy, had been suffering from hæmaturia for eighteen months before he consulted me last May. He had pain only at rare intervals, when clotted blood or lithic deposits were passed, with more or less straining. At times the loss of blood was such that he became weak, but he always recovered his former strength very soon, and presented the appearance of a man in vigorous health. An examination of the bladder revealed nothing. The urine contained old and fresh blood. Renal symptoms were absent. During the summer and autumn the patient's symptoms became more and more marked, and he began to be decidedly weakened by the loss of blood. Although exploratory cystotomy had been proposed to him long before, he continued to reject it, until his condition became so desperate that he consented. On October 15th suprapubic cystotomy was performed, a rubber tampon being inserted into the rectum, while the patient was placed in Trendelenburg's posture, with the pelvis elevated. On the posterior and lateral aspect of the bladder, somewhat above and in front of the entrance of the right ureter, this papillary growth was found, together with a large, firm blood-clot containing a quantity of gravel; the latter had an offensive odor. The operation was tedious, and was somewhat prolonged on account of the depth of the wound, the stoutness of the patient, and the unfavorable ether-narcosis. The tumor was removed with scissors, its base being thoroughly cauterized with Paquelin's cautery. The growth was about as large as a half-dollar, was a centimetre in thickness, and slightly pedunculated. Numerous small elevations, of the size of a pin's head and smaller, were scattered over the surface of the vesical mucous membrane. These seemed to be isolated papillary projections. The patient made a good recovery, though the suture in the bladder failed to hold. The urine is now almost normal, and contains no blood, and the pain has ceased. The tumor shows on microscopical examination the ordinary appearance of a papilloma—ramifying papillæ, composed of connective tissue, containing blood-vessels, covered by several layers of epithelium; in many places the connective tissue is filled with small round cells.

A New Instrument for Performing Internal Urethrotomy.—Dr. Lange showed a series of small knives designed for dividing impermeable strictures from behind. A filiform bougie was first introduced into the stricture through the wound made in posterior urethrotomy; to this was attached a thread on which were strung one or more knives, which were then drawn through the stricture and out at the meatus. The knives could be arranged so that their blades would look in different directions, and thus divide the stricture at several points.

In reply to Dr. Wyeth, Dr. Lange said that he had used Bangs's dilating filiform bougie, but found that the present instrument could be used successfully in cases in which no bougie would pass from before, and where false passages were present.

Dr. McBurney said that he had passed a filiform bougie up through a stricture to the meatus, attached a piece of silk to it, and then pulled a Maisonneuve instrument into the bladder.

Dr. Lange said that in very tight strictures it was not very easy to pass a Maisonneuve in the manner described. The advantage possessed by the knives shown was that they could be *drawn* from behind forward, instead of being pushed. They were constructed on the same plan as the Maisonneuve knife.

Meeting of December 28, 1887.

The President, Dr. Lewis A. Stimson, in the Chair.

Multiple Vesical Calculi—Nine, weighing 1,260 Grains; Suprapubic Cystotomy, according to Petersen's Method; Recovery.—Dr. C. K. Briddon presented a patient with the following history: D. M. W., aged fifty-five, a farmer by occupation, entered the Presbyterian Hospital on November 9, 1887. He had suffered for seven years with severe pain in the bladder and urethra, more marked during and after micturition; it had become so incessant of late as to require a frequent resort to the use of opium for its alleviation. For two years he had not been able to empty his bladder without the aid of a catheter; he could begin to urinate, but not relieve himself of the entire contents of the organ except by introducing a soft-rubber instrument, which he used himself. The urine had for a long time been turbid when passed, depositing a quantity of tenacious mucus and occasionally blood. In April last his meatus was incised (for what reason it was not clear), but no benefit was experienced. His appetite was good, his bowels being somewhat constipated. On admission his general condition was good.

On the introduction of a sound, a stone was readily detected; from the fact that the characteristic click was obtained on turning the instrument in different directions, it was inferred that more than one calculus was present. The patient was kept in bed, his bladder being washed out daily with a 3-per-cent. solution of resorcin. Buffalo lithia-water, No. 2, was administered internally, and the bowels were regulated. Previous to the operation an examination under ether revealed the presence of several calculi and an enlarged prostate. Ether was administered on November 19th, and the speaker operated. The pubes having been shaved and the parts thoroughly cleansed, the bladder was washed out with a solution of boro-salicylic acid; then, Petersen's rectal bag having been introduced, the rectum was distended with twelve ounces of warm water, after which eight ounces of boro-salicylic solution were retained in the bladder, causing it to rise above the symphysis, where it formed a prominent projection. An incision, three inches in length, was made in the median line, extending down to the symphysis. The prevesical space was found to contain a number of large veins having a vertical course; it was necessary to tie most of these on account of persistent oozing. The lower edge of the peritonæum was recognized at the upper end of the incision, but it was not injured. The bladder-wall, having been exposed, was incised, and nine fawn-colored calculi, weighing two ounces and five drachms, were removed. The incision was then partially closed at its upper end by sutures of silk-worm gut, and two long drainage-tubes were passed through the opening to the most dependent portion of the bladder, in order to prevent the urine from infiltrating the parts in the neighborhood of the wound. They failed to drain, but no mischief resulted, as the bladder simply drained into the dressing. No febrile reaction followed the operation. Urine escaped through the abdominal wound, but none came away through the tubes. The patient had no unfavorable symptom. Irritation of the skin was prevented by the application of oxide-of-zinc ointment, and after four days the tubes were removed, no urine having escaped through them. The upper part of the wound healed primarily.

November 28th.—The bladder is being irrigated with a 3-per-cent. solution of resorcin.

30th.—Granulation appearing.

December 17th.—The abdominal wound is now a small sinus, through which all the urine is voided. The patient can retain it about two hours and a half.

26th.—A week ago a soft-rubber catheter was introduced and tied in place; all the urine then passed through it, the sinus being covered by a scab. The catheter was removed to-day, the patient being instructed to introduce it himself every two hours.

The patient was now free from pain, and, although the wound had not entirely healed, no urine escaped through it. In two days he would be permitted to dispense with the instrument, and would be discharged from the hospital cured. In reply to a question by Dr. Weir, the speaker stated that he did not see the prostate during the operation. There was no enlargement of the middle lobe.

Dr. Gerster asked if the kidneys were healthy.

Dr. Briddon replied in the affirmative. The pus from the urine could be entirely accounted for by the presence of cystitis.

Dr. Weir asked the reporter if he had been able to recognize the openings of the ureters. In two instances in which he had performed epicystotomy he had failed to find them, though in one case very diligent search was made.

Dr. Briddon replied that he had not only been unable to find them at the operating-table, but in more than one case he had not succeeded in finding them at the autopsy.

Dr. Weir remarked that he had some time ago removed a kidney in the case of a woman in whose bladder Dr. T. A. Emmet had made a large opening. In this instance he had been able to identify under ether the openings of the ureters, from which urine could be seen to issue in spurts, instead of in a steady stream, as had been described by some observers. He had never found them in the male, nor had he been able to perceive in these cases the intermittent urinary flow.

Dr. Gerster said that it was natural to expect suppression of urine during ether narcosis. He had never succeeded in finding the ureteric openings, but Dr. Willy Meyer, formerly an assistant to Trendelenburg, had stated in a recent paper that the spurting of urine from the ureters had frequently been observed at the operating-table.

Dr. Abbe asked if any of the members of the society had had experience in suprapubic lithotomy in children. He had seen Mr. McCormac operate upon a child with ease and rapidity. That surgeon believed it to be the proper operation in that class of patients.

Dr. Briddon said that he had frequently seen the operation performed in the case of children.

The President believed that suprapubic lithotomy was first performed upon a boy by Franco three centuries ago.

Dr. Briddon stated, in conclusion, that he had made no attempt to suture the bladder, as the stitches usually tore out.

The Radical Cure of Hernia, with special Reference to the Open Method of treating the Wound.—Dr. Charles McBurney read a paper with this title (see page 57).

Five patients were presented by the reader.

Dr. Briddon asked if there was really any advantage in the supporting sutures over the simple tamponade.

Dr. McBurney said that the sutures not only secured positively the granulation of the wound throughout, but they also secured the involvement in the cicatrix of all the layers of tissue forming the abdominal wall, including the conjoined tendon. He thought that he would in future use additional quilting sutures, a quarter of an inch from the edge of the wound. The tampon was, moreover, difficult to keep accurately in place.

The President asked if the skin was not inverted to the bottom of the wound.

Dr. McBurney said that it was not, as the deepest tissue was naturally partly everted by the sutures.

Dr. Weir had been struck by the doubt cast by the reader of the paper on the efficacy of a well-fitting truss. He himself had vainly tried to settle this point in going over a number of cases of strangulated hernia in which the previous use of a truss had been mentioned, but the facts bearing on the point were too imperfect to be of much avail. In his own experience he had not met with a case of strangulation following the use of a properly applied truss. He had, however, as many other surgeons had done, encountered strangulation with ill-fitting trusses. Feeling yet confidence, therefore, in a truss, so long as this was comfortably worn and fulfilled its purpose, he should feel that to such a patient the radical operation should not be advised, even though the risk was less than 2 per cent. between ten and forty years. Where there was distress, incapacity, or serious impairment resulting from work, and where failure of a truss existed, then the operation might profitably be employed.

In a recent article on this subject, published in the "British Medical Journal" of December 10th, Barker had been credited with twenty-five cases and no deaths, Franke with twenty-four and no deaths, Macewen with fifty-four and no deaths, and Banks with fifty-two and two deaths, the total being one hundred and sixty-two cases. Out of all these cases, moreover, there were 89 per cent. of recoveries. Every surgeon agreed that the essential point in the operation was to get rid of the sac, either by tying it off or by tucking it up, as Macewen did, but opinions differed as to the best method of disposing of the canal. Socin did not suture this at all, and used no truss afterward; Banks and Macewen both sewed up the canal to a greater or less extent. One must have more extended experience before one could be prepared to state which was the best method. So far the preponderating evidence was in favor of closing the canal. The speaker had performed the radical operation between thirty and forty times; he considered Riesel's method radically the most perfect one, but too little experience was yet connected with it. It was better to leave the wound to close after suturing the canal by granulation, so as to obtain the advantage of the cicatrix. It would be, however, he feared, necessary to experiment for a long time before one could attain a perfect method.

Dr. Abbe thought that Dr. McBurney's results were quite satisfactory, although not absolutely perfect. In closing the median incision after laparotomy surgeons were now careful to suture all the tissues, so that ventral hernia was comparatively rare. He had seen only one, and that was in a case in which a large-sized drainage-tube had been inserted at the lower angle of the wound, at which point the latter had closed by granulation. He thought this process analogous to Dr. McBurney's method.

It was not easy to obtain a firm cicatrix in the suturing methods unless a large mass of tissue had been included in the sutures. It was not enough to suture the pillars of the ring; if several layers of tissue were brought together, as was done by Macewen, a more solid cicatrix was obtained. The speaker said that he was now accustomed to perform all his operations after this method, except where the tissues were so thinned that a sufficient amount could not be obtained. During the past year and a half he had performed Macewen's operation twenty-five times, and had never seen a recurrence of the hernia, although several of the patients had been kept under careful observation. The resulting cicatrix was linear and without surrounding induration. He had adopted other methods in about eighty cases, having operated fifty-six successive times without an accident. Some of these cases were very bad ones; in two instances a considerable portion of the colon was contained within the scrotum, being so adherent to the sac that it could not be stripped off.

As regarded the imperfect union between planes of cellular tissue, he thought that this union would take place if the connective tissue was brought together between them. Macewen's method was an excellent one if properly followed, but that suggested by the reader was perhaps the best for the general surgeon, who operated infrequently for the cure of hernia.

Dr. McBurney said that the deepest tissue was naturally partly everted by the sutures. He admitted the justice of Dr. Weir's remark that there was certainly *some* danger in any cutting operation for hernia. He was by no means prepared to say that all hernias should be operated upon. He would not urge the operation upon a well-to-do patient who had a small hernia which was satisfactorily kept up by a well-fitting truss, provided the patient was so situated as to be always within reach of skilled assistance in case of accident. But for workingmen, for those whom trusses did not suit, and for those who by their residence or occupation were out of reach of good assistance, a radical cure was a very desirable end to attain. He did not see the force of Dr. Abbe's reference to the healing of the wound in a case of laparotomy, since the conditions were entirely different from those present in an operation for the cure of hernia. The former wound was made through fresh tissues, and the different layers, including the peritonæum, were brought together and united naturally, as in any incised wound. When this was carefully done a ventral hernia rarely resulted. Hernia following the use of a drainage-tube after laparotomy was not an analogous condition, since the tube extended through the peritonæum, and on its removal invited the escape of intestine. The most important step in the operation for hernia was the complete removal of the peritoneal pouch. It was interesting to note that good results had been obtained by so many different methods. Not long ago many surgeons would have said that the suturing of the pillars of the ring was an important step. Now few would hold that opinion. If a section of the tissues were made three or four months after the performance of Macewen's operation, it was doubtful if any firm union would be found in the deeper parts, as raw surfaces were not brought together in this operation, and the sutures were practically subcutaneous. There was no probability that union occurred under such conditions. In reply to a question by Dr. Weir, the reader said that, while the obliteration of the sac was probably the most important point in the operation, yet this alone was not sufficient, for this removal of the sac alone would leave the patient with a weak abdominal wall.

The President asked regarding the condition of the cord after operation.

Dr. McBurney said that it had not been compressed by the cicatrix in any of his cases.

Dr. Weir said, in reference to the case of ovarian hernia mentioned by the reader in his paper, that two weeks before he had operated at the New York Hospital for the relief of a non-strangulated but troublesome irreducible femoral hernia in a woman. The sac was universally adherent and contained omentum, and apparently a loop of intestine. The latter resolved itself finally into an oblong cystic tumor, about three inches in length. It was punctured with a hypodermatic needle, and clear fluid was withdrawn. On opening the cyst its lining membrane presented a number of longitudinal folds that suggested a dilated Fallopian tube. The diagnosis was confirmed by making traction upon the hernial mass, when the uterus was felt by an assistant to be decidedly tilted toward the corresponding side of the pelvis. The tube was thereupon tied at its point of entrance into and emergence from the hernia, and was cut off; a portion of omentum was likewise removed. The sac was disposed of after Czerny's method, and the falciform edge was sewed to Poupart's ligament. On the day following the operation the patient complained of severe general pain in the abdomen, and her temperature rose to 101° F., so that general peritonitis was feared. After a brisk purgation with a double Seidlitz powder the temperature fell, she became entirely relieved, and had since progressed favorably.

Fracture of the Sustentaculum Tali, Os Calcis, and Scaphoid.—The President presented a specimen showing fracture of the sustentaculum tali, the anterior portion of the os calcis, and the inner part of the scaphoid. The patient, a man thirty years of age, was injured by jumping from a height of thirty feet during a paroxysm of delirium tremens, and died soon after he was brought to the hospital. The appearance of the left foot closely resembled that of splay-footed valgus; the internal border in front of the ankle was lowered, and the front of the foot was somewhat abducted. The head of the astragalus was prominent on the internal border. The region of the internal malleolus was apparently normal, except so far as it was involved in the general swelling; the external malleolus was prominent, and its appearance suggested that the fibula had been broken above the ankle. A piece of bone, freely movable with crepitus, could be felt in front of the astragalus on the inner border, and there was marked crepitus just in front of the external malleolus. On dissection, the astragalus was found to be displaced forward upon the tibia about a quarter of an inch, its head being somewhat adducted, projecting internally beyond the scaphoid. A fragment of the scaphoid, including the entire height of its inner border and having an average thickness of an eighth of an inch, was broken off. The sustentaculum tali was detached and the anterior portion of the calcaneum was fractured transversely and crushed; its anterior articular surface was fissured, but the fragments were not separated. It seemed as if the fracture must have occurred during abduction of the front of the foot, by the violent propulsion of the astragalus downward, forward, and inward, during which movement the prominent wedge-shaped angle below the external articular surface was driven into, and thus crushed, the anterior part of the calcaneum. The fracture of the scaphoid was apparently effected by the pressure of the head of the astragalus, possibly aided by the tension of the tibialis posticus and the anterior portion of the internal lateral ligament. The mechanism of the fracture of the sustentaculum tali was not easily comprehended. In the few reported cases of fracture of this process alone the cause had been inversion of the foot, while in this case everything pointed to the presence of abduction and eversion. An explanation that seemed plausible was that the fracture was effected by avulsion through the internal lateral ligament, made tense by eversion, the fracture of the process being aided by that of the adjoining portion of the calcaneum.

Everted Dorsal Dislocation of the Hip.—The President reported a case of this rare injury, which occurred in a woman aged fifty-five, who was knocked down by a horse-car. The (right) injured lower extremity was parallel with the other and with the long axis of the trunk, and was so far everted that the foot rested on its outer border as the patient lay in bed. The limb could be adducted and flexed, but could not be abducted or rotated inward. There was shortening of an inch and three quarters. The trochanter was prominent, and was elevated; the head of the femur could be distinctly felt below and rather to the outer side of the anterior superior spinous process of the ilium. By flexing and adducting the limb, and then rotating it inward, the dislocation was easily transformed into the common dorsal variety. On increasing the flexion to a right angle, abducting and rotating outward while lifting, the original form was reproduced. After two or three such failures reduction was made with a distinct sound by maintaining the inward rotation after flexion to a right angle, and slight abduction, and lifting the limb steadily and with considerable force. During the night following reduction the dislocation recurred; it was again reduced, and the limb was kept in a position of abduction by traction with a five-pound weight. It again recurred, was reduced, and recurred; finally the bone was kept in place by a traction with a fifteen-pound weight, a broad bandage being drawn tightly around both hips. No crepitus was felt during the many manipulations, and each reduction was accompanied by a distinctly audible snap. The facility with which recurrence took place suggested, in the absence of fracture of the acetabulum, that a portion of the capsule remained interposed between the articular surfaces. The patient had, in addition to the dislocation, a fracture of the humerus and of two ribs, a laceration of the perinæum, and an old cavity in each lung.

Book Notices.

Functional Nervous Diseases: their Causes and their Treatment. Memoir for the Concourse of 1881–1883, Académie Royale de médecine de Belgique, with a Supplement on the Anomalies of Refraction and Accommodation of the Eye and of Ocular Muscles. By George T. Stevens, M. D., Ph. D., Member of the American Medical Association, of the American Ophthalmological Society, etc. New York: D. Appleton & Co., 1887. Pp. xiii–5 to 217. [Price, $2.50.]

In the beginning of Dr. Stevens's book (page 21) we find the following: "Difficulties attending the functions of accommodating and of adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and more frequently than other conditions constitute a neuropathic tendency." This, of course, is far too sweeping. It is an undoubted fact that the ocular difficulties referred to may aggravate the condition of those in whom a predisposition to nervous trouble already exists; but it is equally certain that manifold derangements of the apparatus of vision may be present without the co-existence of any noteworthy neurotic symptoms.

It can not be denied, however, that ocular and indeed all other peripheral disturbances may greatly aggravate the condition of one whose central nervous system is morbidly predisposed and unstable, by reason of hereditary or other causes. Thus, in chorea, the removal of an irritating and pendulous foreskin may facilitate, but does not always by any means accomplish, a cure. The same may be said of irritations propagated from the genito-urinary canal or from the intestinal tract, or from the eyes (or indeed from the nose or ears).

In view of such facts, an extreme view of the importance of peripheral irritation, and much more of one exclusive class, in relation to the ætiology of neurotic disturbances is not admissible.

Still, when we have thus narrowed down the pathogenetic importance of those peripheral disturbances involving the organ of vision, enough of value still remains to afford an ample *raison d'être* for Dr. Stevens's book. It is a notorious fact that previous to the appearance of Dr. Stevens's writings those more occult disturbances of the ocular muscles which Stevens groups under the generic term of heterophoria had received but slight attention from either ophthalmologists or neurologists. It is all very well to talk about unpublished exploits, now that Stevens's papers have been incorporated in medical literature, and are thus accessible to criticism. For careful work in systematizing the whole subject of insufficiency of the ocular muscles and showing the importance of correcting these anomalies when found in conjunction with nervous disturbances, Dr. Stevens deserves much credit. In conceding this it is not necessary to admit that operations upon the muscles of the eye are always or even often sufficient in themselves to cure such protean affections as epilepsy, migraine, chorea, and the like. On the other hand, operations of this kind, when undertaken conscientiously with a view to removing insufficiencies, may *sometimes* prove valuable aids to internal treatment, about in the same way that the operation of circumcision sometimes aids recovery in chorea.

Dr. Stevens has written a suggestive little book, and the mere fact that it has excited criticism is pretty fair proof that there is good in it. For our own part we confess that we have derived much pleasure from its perusal.

Finally, the book is written in a style which is decidedly fascinating. Dr. Stevens knows much about English prose, he has a well-developed perception for rhythm both in ideas and in words, and hence he makes his meaning very plain. His monograph should be read by those who are interested in the problems of neuro-pathology.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—Malgaigne, "Manuel de médecine opératoire." Ed. by Le Fort. 1st part. (16*fr.*) —— Péan, "Leçons de clinique chirurgicale." (25*fr.*)

A. Delahaye & Lecrosnier, Paris.—E. Bourgoin, "Traité de pharmacie galénique." (15*fr.*) —— Ferraud, "Leçons cliniques sur les formes et le traitement des bronchites." (4*fr.*) —— P. Gaudin, "Sur la pathogénie des accidents nerveux consécutifs aux explosions de grisou." (2*fr.*)

O. Doin, Paris.—Bardet and Egasse, "Formulaire des nouveaux remèdes, 1887. (4*fr.*) —— A. E. Selle, "Le guide maternel ou hygiénique de la première enfance." (1*fr.* 50.) —— T. Cruard, "Hygiène de l'enfance." (1*fr.* 50.) —— A. Corre, "Traité clinique des maladies des pays chauds." (15*fr.*) —— A. Étienne, "Ruptures de l'urèthre chez l'homme et leur traitement." (2*fr.* 50.) —— G. Dupont, "Étude de la syphilis du nez et des fosses nasales." (2*fr.*)

Bureaux du "Progrès médical," Paris.—Kojewnikoff, "Ophthalmologie nucléaire." (0*fr.* 50.) —— A. Sollier, "De l'état de la dentition chez les enfants idiots et arriérés." (2*fr.* 50.)

J. F. Bergmann, Wiesbaden.—O. Seifert and F. Müller, "Taschenbuch der medicinisch-klinischen Diagnostik." 4th ed. (2*M.* 80.)

Heuser, Neuwied.—J. G. Sallis, "Ueber hypnotische Suggestionen." (1*M.* 50.)

C. F. Schmidt, Strassburg.—S. Rabow, "Arzneiverordnungen zum Gebrauche für Klinicisten u. praktische Aerzte." 13th ed. (2*M.* 40.)

Urban & Schwarzenberg, Vienna.—"Recepttaschenbuch, klinisches, für praktische Aerzte." 9th ed. (2*M.*)

BOOKS AND PAMPHLETS RECEIVED.

Doctor and Patient. By S. Weir Mitchell, M. D., LL. D. Harv., Member of the United States National Academy of Sciences, President of the College of Physicians of Philadelphia, etc. Philadelphia: J. B. Lippincott Company, 1888. Pp. 5 to 177. [Price, $1.50.]

Practical Lessons in Nursing. Fever Nursing: Designed for the Use of Professional and other Nurses, and especially as a Text-book for Nurses in Training. By J. C. Wilson, A. M., M. D., Visiting Physician to the Philadelphia Hospital and to the Hospital of the Jefferson College, etc. Philadelphia: J. B. Lippincott Company, 1888. Pp. viii–11 to 210. [Price, $1.]

The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1886. London: H. K. Lewis.

The Treatment of Uterine Fibroids by Electrolysis. By W. E. Steavenson, M. D., M. R. C. P., etc. London: J. & A. Churchill, 1887.

De las Fracturas del Cráneo y de la Trepanación. Estudio clinico por el Dr. D. Enrique de Areilza. Barcelona: Tipografia "La Academía" de la Viuda é Hijos de Evaristo Ullastres, 1887.

The Peritoneal Relations of the Cæcum. Rectification of an Historical Error. By R. Matas, M. D. [Reprinted from the "New Orleans Medical and Surgical Journal."]

Wounds, their Aseptic and Antiseptic Management. By David Prince, M. D., Jacksonville, Fla.

The Radical Treatment of Trachoma. Paper read before the Central Illinois District Medical Society, October 19, 1886. By A. E. Prince, M. D., Oculist to Wabash Hospital, etc. [Reprinted from the "St. Louis Courier of Medicine."]

Proceedings of the Connecticut Medical Society, 1887. Ninety-sixth Annual Convention, held at Hartford, May 25th and 26th. New Series, Vol. III, No. 4. Published by the Society. D. B. St. John, M. D., secretary, Hartford, Conn.

Remarks on Classification of Vertebrata. By Burt G. Wilder. [Extracted from the "American Naturalist."]

Eighteenth Annual Report of the Manhattan Eye and Ear Hospital with Throat and Nervous Departments. No. 103 Park Avenue, New York.

Progressive Muscular Atrophy beginning in the Legs. By J. B. Marvin, M. D., Professor of Principles and Practice of Medicine and Clinical Medicine in the Kentucky School of Medicine. [Reprinted from the "Practitioner and News."]

Report on Progress in Medicine. By J. B. Marvin, M. D., etc. [Read before the Kentucky Medical Society at Paducah, June 14, 1887.]

Miscellany.

A Prize for North Carolina Physicians.—The publishers of this journal have offered an annual premium of medical books of the value of $25 to the candidate who passes the most creditable examination before the State Examining Board of North Carolina; the books to be selected from their medical publications by the successful competitor when the secretary of the State Medical Society notifies the firm of the result of the examinations.

The Coating of Pills to Order.—Messrs. Eli Lilly & Co., of Indianapolis and Kansas City, announce their readiness to make pills from formulas furnished to them by individual physicians—sugar-coated in lots of 3,000 or more, and gelatin-coated in lots of 1,000 or more. They state that a small number of pills can be coated with gelatin more economically than with sugar, but that for large lots sugar coating is the less expensive. They add that, the larger the number coated at a time, the better will be the finish.

The New York Post-graduate Hospital.—Quoting from the annual report of this institution, we stated last week that the whole number of patients treated in the wards during the year ending May 1, 1887, was 172. We are now informed that the number was 320.

The New York Academy of Medicine.—At the next meeting of the Section in Laryngology and Rhinology, Tuesday evening, the 24th inst., Dr. Carl Seiler, of Philadelphia, will read a paper on "Ecchondroses of the Septum Narium and their Treatment."

At the next meeting of the Section in Pædiatrics, Wednesday evening, the 25th inst., Dr. A. Jacobi will read a paper on "Sepsis of the Newly Born," and Dr. A. Seibert "A Contribution to the Study of Cerebral Paralysis in Infancy."

At the next meeting of the Section in Obstetrics and Gynæcology, Thursday evening, the 26th inst., Dr. Hubbard W. Mitchell will report "A Case of Complete Procidentia Uteri, with Operation," Dr. H. J. Boldt will read a paper on "Interstitial Salpingitis," and Dr. James R. Goff will report "A Case of Ovarian Tumor simulating Extra-uterine Pregnancy."

At the next meeting of the Section in Materia Medica and Therapeutics, Friday evening, the 27th inst., Dr. P. H. Kretzschmar will read a paper on "Dettweiler's Treatment of Pulmonary Consumption."

The nomination and election of officers are announced for all these meetings except that of the Section in Pædiatrics.

The Health of Boston.—During the week ending Saturday, January 14th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 21 cases and 7 deaths; scarlet fever, 34 cases and 10 deaths; typhoid fever, 9 cases; measles, 20 cases and 1 death. There were also 22 deaths from consumption, 36 from pneumonia, 2 from whooping-cough, 17 from heart disease, 16 from bronchitis, and 6 from marasmus. The total number of deaths was 224, against 199 in the corresponding week last year.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending January 13th:

(Published in accordance with Section 4, act approved April 29, 1878.)

Ireland.—The average annual death rate represented by the deaths registered during the week ending December 24th in the sixteen principal town districts of Ireland was 31·2 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 14·4, and the highest in Newry, viz., 59·7 in a thousand.

Dublin.—One hundred and ninety-nine deaths were registered during the week ending December 24th, including 3 from measles, 8 from whooping-cough, 4 from diphtheria, 4 from scarlet fever, 2 from typhus, 2 from enteric fever, 3 from diarrhœa, and 1 from dysentery. Diseases of the respiratory organs caused 43 deaths. Three accidental deaths were registered, and in 31 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 29·4 in a thousand.

Callao.—The United States consul, in his dispatch dated December 9, 1887, states that "the latest report received by the Government here from Dr. Matto, sent officially to Chili to observe the progress made by the cholera, is to the following effect: 'Santiago, December 7, 1887. I have visited the lazarettos and sanitary establishments at Santiago. The epidemic is stationary. Sixty new cases; one third die. Treatment has happiest effect. At Valparaiso, 10 cases. An increase at Rancagua. At Concepcion, none.' The sanitary regulations established here, and stated in my recent dispatches, are rigorously observed. The lazaretto on San Lorenzo Island is approaching completion. Health of city and coast satisfactory."

Havana.—The sanitary inspector reports as follows, under date of January 3, 1888, that "there were 712 deaths in this city during the month of December. Fifteen of those deaths were from yellow fever, 312 from small-pox, 3 from typhoid fever, 1 from bilious fever, 9 from so-called pernicious fever, and 3 from diphtheria. Small-pox has steadily increased since its commencement over eight months ago, and the above statement of deaths from it does not include the large mortality from said disease in the adjacent towns of Regla and Guanabacoa. I am informed that small-pox has been declared epidemic in Cardenas."

The same officer reports 8 deaths from yellow fever and 69 from small-pox during the week ending December 31, 1887.

Buenos Ayres.—One thousand and seventy-three deaths were registered during the month of October, 1887, including 80 from small-pox, 19 from enteric fever, 5 from scarlet fever, and 53 from diphtheria.

Mortality Table, Foreign Cities.

Cities.	Week ending—	Estimated population.	Total deaths from all causes.	Deaths from— Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Warsaw	December 17.	439,174	240	..	....	10	....	....	9	6
Calcutta	November 26.	433,219	218	11	....	....	....	....	....	1
Copenhagen	December 13.	290,000	147	..	....	....	....	....	9	6
Munich	December 10.	269,000	114	..	....	...	....	1	2	6
Munich	December 17.	269,000	131	..	....	....	....	1	4	7
Genoa	December 24.	179,503	115	..	....	8	1	....	....	2
Trieste	December 17.	150,157	82	..	....	8	....	....	1	3
Stuttgart	December 24.	125,510	37	..	....	....	....	....	....	1
Bremen	December 17.	119,000	45	..	....	....	....	....	1	2
Havre	December 24.	112,074	50	.	....	1	...	4	....	....
Pernambuco	December 6.	110,000	45	..	....	...	....	1	....	....
Barmen	December 17	108,000	38	..	....	....	....	....	....	1
Reims	December 17.	97,903	50	..	....	....	...	2	1	1
Mayence	December 17.	65,701	35	..	....	....	....	....	1	....
Merida	December 13.	48,711	.....	..	....	....	1	1	....	....
Merida	December 20.	48,711	18	..	....	....	4	1	....	....
Merida	December 28.	48,711	18	..	....	....	....	....	....	4
Cienfuegos	December 26.	35,464	28	..	....	16	....	....	....	....

United States.

San Francisco, Cal.—Small-pox.—The number of cases of small-pox in San Francisco during the year 1887 was 166, and during the period from January 1 to 5, 1888, there have been 25 cases. Of these, 14 were among the Chinese. The disease was brought to San Francisco early in May by one of the China steamers, but did not prevail to any extent until November. On December 29th the disease was declared to be epidemic by the board of health. All cases, on being verified, are immediately sent to the hospital, with their bedding and clothing; the premises are fumigated, and all persons living in the neighborhood are vaccinated if possible. Vaccination offices have been opened in various parts of the city. No children are admitted to the public schools without having been previously vaccinated. Over thirty thousand vaccinations have been made at the office of the board of health during the past six months. Under the circumstances, the board of health is of the opinion that the disease will soon be stamped out.

Port Townsend, Wash.—Passed Assistant Surgeon S. C. Devan, M.-H. S., reports, under date of January 1, 1888, that because of the action of the Board of Health of San Francisco, Cal., in proclaiming the existence of small-pox as an epidemic in that city, the board of health at this port have issued instructions, under cover of date December 31, 1887, to their health officer to subject all vessels from the port of San Francisco to rigid examination. He also reports that there are three accredited cases of this disease at Seattle, Wash.

Tampa, Fla.—Dr. J. P. Wall reports that the rumors of the presence of yellow fever at Tampa are without foundation.

THERAPEUTICAL NOTES.

Bryonia Dioica in Uterine Hæmorrhage.—Professor Petrescu, of Bucharest ("Progr. méd.," Dec. 24, 1887), recommends a wine of *Bryonia dioica* as far superior to ergotine in the treatment of metrorrhagia. Three hundred grains of the root are macerated for eight days in a quart of white wine. Dose, a tablespoonful every hour until the hæmorrhage stops.

A Mode of Administering Cod-liver Oil.—M. Dupré ("Clinique," "Progr. méd.," Dec. 17, 1887) recommends the following formula, the advantages of which are, he says, that the mixture may be prepared at home, that it is cheap, and that, while masking the disagreeable taste of the oil, it promotes its digestion:

Cod-liver oil	25 parts;
Powdered white sugar	2 "
Powdered salt	1 part;
Rum	6 parts.

Shake briskly.

Savine in the Treatment of Cancer.—Dr. Lucae, of Berlin ("Therap. Monatsh.," "Rev. gén. de clinique et de thérap.," Dec. 22, 1887), reports a case of cancer of the external ear cured by the persistent application, three times a week, of a powder of equal parts of savine leaves and burnt alum.

ANSWERS TO CORRESPONDENTS.

No. 127.—You will find an article on the subject in this issue of the Journal.

No. 128.—The Hospital for the Relief of the Ruptured and Crippled, corner of Forty-second Street and Lexington Avenue, New York.

No. 129.—One part of sugar of milk should dissolve in seven parts of cold water.

No. 130.—We do not think you will need a more elaborate instrument than the one you mention for ordinary work.

No. 131.—Dr. Noeggerath's views on latent gonorrhœa in women are fully set forth in his book, "Die latente Gonorrhöe im weiblichen Geschlecht," Bonn, 1872, and in his paper entitled "Latent Gonorrhœa, especially with regard to its Influence on Fertility in Women," published in the first volume of the "Transactions of the American Gynæcological Society."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, JANUARY 28, 1888.

Original Communications.

SOME OF
THE CAUSES OF VOCAL DISTURBANCE.*

By HENRY SCHWEIG, M. D.

In reviewing the history of laryngology of the last five years, one can not fail to be impressed with the rapid forward strides in the direction of a more exact localization of the causes of many throat ailments. While the measures calculated to bring relief are numerous, and while the advocates of certain modes of treatment appear to obtain satisfactory results in most cases, still their ideas, when viewed from an impartial standpoint, are, to say the least, conflicting and much at variance.

The labors of Hack and others have done much to throw light on the reflex phenomena due to structural changes in the nose, and many brilliant results are recorded, showing conclusively that a proper recognition is due certain nasal conditions in their relation to impairment of the voice which formerly were considered of very little if any significance. In fact, so sanguine were many observers who followed the results obtained by Hack, Bresgen, and others, that the great majority of laryngeal, pharyngeal, and nasal ailments was referred to some structural change in the nose.

While the destruction of nasal hypertrophies or the correction of a deflected septum was in many instances quite effective in restoring, or at least favorably influencing, an impaired voice, still cases began to multiply which, though subjected to careful local treatment, failed to improve or show any change for the better, though the theories governing reflex phenomena of nasal disease were well borne in mind during the application of surgical measures.

I do not desire to reflect on the good work done in this direction by laryngologists, both here and abroad, and far be it from me to underestimate the importance and utility of those surgical measures calculated to render both nasal passages symmetrical and clear, but I strongly urge a more careful study of cases with a view to the better understanding of the facts that stand in causative relation to certain affections of the throat.

It is of almost daily occurrence in the practice of the laryngologist, more especially where he is brought in frequent contact with vocalists, public speakers, etc., that he is consulted and asked to minister to a rough voice, or one that is commencing to lack in power. An examination of the upper respiratory tract generally reveals some structural changes which justify the opinion that either the galvano-cautery, nasal trephine, snare, or saw will be of benefit. While it is orthodox to interfere surgically in many of these cases, still I hold, and experience has borne me out in the correctness of my views, that asymmetry, or the presence of hypertrophic folds or a deflected septum, does not necessarily imply vocal disturbance, or in fact any subjective symptoms. I have time and again examined the throats of persons who had not then and never had had any throat ailment, and discovered quite enough to justify very heroic measures had there been any subjective symptoms, and I have had occasion frequently to learn the wisdom of looking farther than the nose and throat where impairment of the voice was concerned.

In fact, I know that in a certain proportion of cases surgical interference and topical remedies went far to call into life complications that had not previously existed. Persistent topical measures, when not indicated, may, and frequently do, produce serious mischief, and one is too apt to fall into the error of viewing complaints referred by the patient to the upper respiratory tract as affections purely local.

The laryngologist, like his co-laborers in other special branches, is prone to lose sight of the fact that the field cultivated by him is only a small portion of a complex organism, and it is only too true that it is the rule to search merely in that portion of the body which subjectively seems to be at fault.

During the past few years I have, with a gratifying measure of success, placed reliance on constitutional measures in a number of cases, and have taken a full history of the patient, embodying not alone the complaint for which I was then consulted, but also a general history since birth. This has been of great service to me. In not a few instances in which local measures proved of no avail, the correction of co-existing ailments proved of signal benefit to the voice. More especially is this true where uterine or ovarian complications are present. The sympathy which exists between the uterine system and the throat is very marked, and it frequently happens that uterine complaints of a nature not sufficiently prominent to call for interference will, if remedied, prove to have been the source of an impaired voice.

The disheartening experience, to which we must plead guilty, of seeing a patient week after week and month after month, and hearing the oft-repeated complaint, "Doctor, I am still hoarse, my cough annoys me, singing fatigues me, and my voice is not reliable," need not be so frequent if only a trifle more attention were paid the general condition of the patient.

A troublesome cough, for instance, will sooner or later bring in its train marked changes in the lining membrane of the throat, which then will stand as an effect and *not* as a cause of the cough, as might be inferred from a mere instrumental and visual examination. Where the origin of such a cough is traced and found to be in the ear, for instance, no relief and certainly no cure can be expected unless the aural complaint receives its full measure of attention.

I have known persistent hoarseness to be due to gastric disturbance, and one patient, whose case I recall, where I faithfully cauterized and practiced local medication until the symmetry and good color of the upper air-tract were beautiful to behold, persisted in not improving until salicin and nux vomica were employed to correct a long-standing dyspepsia. As the dyspepsia gave way to treatment, so the hoarseness grew gradually less until both ailments finally disappeared. I may here add that, with the exhibition of the stomachic, local treatment of the throat was entirely abandoned. The patient, who occasionally becomes hoarse, informs me that she relies entirely on the capsules of salicin and nux vomica, and that they never fail to give her relief. I am not ready to assert that had no surgical measures been adopted recovery would still have taken place, but I know that without constitutional measures success would have been doubtful, if not impossible.

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* Read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, December 27, 1887.

In cases of paresis of the vocal bands, where there is more or less phonatory leakage with consequent vocal disturbance, much reliance was formerly placed (and with good reason) on local stimulation by electricity and otherwise. But, while in a certain series of cases this proves of benefit, in others again it is of no avail.

I find that where the general health is at a low ebb very satisfactory results are obtained from energetic constitutional measures, strychnine, combined with the hypophosphites of calcium and sodium, giving me the best results. Persistent constipation, especially if of long standing, may do much to impair the power and quality of the singing voice. Here a more prompt and certainly more rational proceeding would be the use of some remedy looking to the correction of the constipation.

It is a simple matter, and one (aside from its more agreeable aspect as far as the patient is concerned) far more useful, to correct any existing constitutional trouble and defer surgical measures until such time as may appear proper from a failure of constitutional remedies to give relief.

I trust that I may not be understood to recommend constitutional treatment to the exclusion of local. On the contrary, I wish to warn against the error of relying too much on any one line of procedure, as one-sided views are calculated to clog the wheels of progress.

There is a class of cases that I desire to call attention to, as they do not always receive that attention which is their due. Given a patient who presents himself showing a sufficient amount of deviation from the normal to account for his complaint—namely, an impaired voice. Steps are taken and local measures instituted calculated to do away with all pathological elements. Relief is not forthcoming. The patient is carefully questioned regarding any former illness which he may have had, and an effort is made to discover some ailment that might account for the want of success of local measures. Let us assume that sufficient has been learned to justify active constitutional interference, which after a fair trial also proves unavailing.

It is here that a careful investigation into the mode of living of the patient becomes necessary, and in not a mean number of cases will it be found that the abuse, or even the moderate use, of tobacco or alcohol is at the bottom of the disturbance. In fact, it is good practice to forbid the use of tobacco while a patient is suffering from any of the lesions of the upper air-passages that come under the care of the laryngologist.

That the voices of many well-known singers have been ruined by the abuse of alcohol no one will deny, and it is a delicate question to decide what constitutes abuse. Alcoholic stimulants, taken at the proper time and in moderate quantity, do not generally exert any deleterious influence. But quantities in excess of that which the patient should have, do much to ruin a voice. That which may be proper for one may be excessive for another, and it is always well in prescribing or permitting the use of alcoholics to exercise great care and judgment, so that, if at all, we may err on the side of safety.

The influence of syphilis on the vocal organs is too well recognized to require more than brief mention. I do not refer so much to the coarser lesions which can be recognized at a glance as I do to the slow changes in the structure of the lining membrane of the throat which are often found. A form of marked vascularity of the pharynx which is frequently met with where there is a specific history fails, as a rule, to disappear, unless those remedies which come under the heading of antisyphilitics are employed.

The ulcerative sequelæ of syphilis which are met with in a certain proportion of cases require both local and constitutional measures where there is a disturbance of the voice. Even marked ulcerative processes in the upper air-tract do not necessarily impair the voice, but, when this result does obtain, that course of treatment should be adopted which will, while favorably modifying the disease, also speedily restore the voice. In conjunction with the internal remedies I have found nothing to act so well locally as the galvano-cautery, carefully employed. A thorough destruction of the morbid material is all that is required. If we fall into the error of cauterizing too deeply, nothing will be gained, but the risk of exciting troublesome cicatricial contraction will be very much heightened, and in this way the very object which we wish to attain will be defeated. The voice will not improve.

Malaria, even when none of its characteristic phenomena are present, may act as a disturber of the human voice. Cases may present themselves in which only the history of the case furnishes us with malarial data, if I may so term them, and still, though nothing in the patient's general condition would warrant the belief, quinine and arsenic often act promptly in bringing about a favorable change in the voice.

The "lumpy" voice associated with tonsilar affections can, in a certain proportion of cases, be traced to an underlying rheumatic diathesis, and the good results which have lately been obtained from the local as well as general use of salicylic acid in these cases can be, I think, safely referred to the antirrheumatic action of the remedy.

There are instances where one feels tempted to discard almost everything connected with the local treatment of throat disease, and here I refer in the main to those cases in which there is a disturbance of the voice. According to the individual preference of the practitioner, the spray, the sponge probang, the cotton wad, or the insufflator may have been employed. Or, perhaps, the galvano-cautery, the saw, or the snare may have been resorted to, but still the ailment will not yield. Inspection discovers nothing which could count in keeping up the existing trouble, but still it will not disappear. Now, it is in just such cases that close questioning and investigation, as well as the best judgment on the part of the medical attendant, are called for.

It will *not* do to act hastily, and conclude that the discovery of any one existing ailment other than that in the throat means the discovery of a road leading to the successful issue of the case, but it *will* be incumbent on the careful and conscientious physician to carefully weigh every evidence of existing abnormal conditions, and judge as to their possible bearing on the throat complaint. If such a course were more generally adopted, I make bold to assert that success would be far more frequent than if local symptoms were combated by local measures alone.

I mentioned above, and did so with a full consciousness that diverse views may be held, that surgical and instrumental interference in dealing with impairment of the vocal function might, in a proportion of cases, exert a deleterious influence. The throat is not a tolerant organ that can be disturbed with impunity, and the persistent local medication which is so generally resorted to may do much to call into life new complications. When, two years ago, I called attention to a number of cases which had come under my observation, showing large dry patches in the anterior nares where the galvano-cautery had been too freely used, I did not realize their full import in determining changes in the voice by reason of the loss of function of the erectile tissue beneath. And occasionally a patient whose septum has been deflected will show the results of a too heroic treatment, in the shape of a more or less extensive perforation which may give rise to abnormal sounds during inspiration or expiration.

A too free use of destructive agents in the pharynx where follicular enlargements exist may lead to ultimate cicatricial contraction, and this is likewise true where the posterior pillars have been too freely cauterized for an hypertrophy or for something else. The tonsils, when enlarged, may come under the care of one who is opposed to amygdalotomy, but favors destructive agents in the form of either Vienna-paste, chromic acid, or the galvano-cautery. Such tonsils are sometimes seen, after a course of cauterization, with their surfaces broken by many perforations, but with their size very little reduced. It is needless to remark that cicatricial contractions of the pillars, irritation of the tonsils, etc., may do much to interfere with the proper tone-production, and it is a question whether in some of these cases it would not have been better to abstain entirely from the use of local measures.

Of late the opinion has gained ground, and its acceptance rests on good foundation, that, to use a paradox, laryngeal disease is frequently not laryngeal disease, but merely an expression of a general disturbance. Here local measures would be worse than useless, as the introduction of medicinal agents—such as astringents, for instance—would not alone be uncalled for, but absolutely harmful. The only proper course here would be to remedy the underlying pathological condition. I simply desire to warn against the danger of accepting that which is discovered by the laryngoscope as necessarily a primary ailment.

The causation of throat ailments, and I refer more especially to those affecting the voice, covers a broader field than the upper air-passages. Further, there are many cases of asymmetry of the nose due to structural changes which are accidentally discovered and which do not give rise to any vocal disturbance, but still present those prominent features which would call for surgical measures were there any subjective symptoms.

The administration of one or two doses of compound licorice powder, where constipation or an overloaded bowel is present, has often yielded results quite as brilliant as could be desired. And purgation in plethoric subjects, or stimulation and tonic measures in anæmic patients, have often been productive of much good. It is not my wish to underrate the value of local surgery in the class of cases under consideration, and I may be permitted to express my admiration of the many and ingenious mechanical contrivances in this direction of Elsberg, Curtis, Bosworth, Jarvis, Goodwillie, and others, but I trust that a more general appreciation of the possibility of favorably modifying vocal derangements by systemic remedies may be acknowledged. Given, then, a case of voice disturbance, it should be our duty to inquire carefully into the patient's history, and leave no question unasked which might disclose the presence of anything out of the normal.

Brilliant as have been the results of laryngoscopy, still it sometimes fails to lay bare the causes of a derangement of the voice, and the practitioner who relies on its evidence entirely, to the exclusion of other data, will not serve the best interests of his patients, and will have but poor success in the management of his cases.

26 East Twentieth Street, *December 27, 1887.*

THE DETECTION OF CONCEALED INSANITY BY NITROUS-OXIDE GAS AND OTHER ANÆSTHETICS.

PRELIMINARY CONTRIBUTION.[*]

By ALLAN McLANE HAMILTON, M. D.

The use of anæsthetics for the detection of malingering is an old and familiar medico-legal measure. In most of the works upon medical jurisprudence we are directed, in suspected cases of feigned paralysis or contracture, to give some anæsthetic agent, and there is no doubt of the wisdom of this procedure when the person is unusually cunning, though, thanks to electrical diagnosis, the recognition of fictitious paralysis is now comparatively easy. I am not aware, however, that any agent of the kind I mention has been used for the diagnosis of mental disease, real or shammed. It is true that Westphal[†] endeavored to determine the reality of delusions that were supposed to be feigned in a murderer by making him drunk with brandy, but, in spite of the intoxication, the patient consistently adhered to his false beliefs. Beyond this case I have been unable to find any record of the employment of agents which affect the higher consciousness, or rather the inhibiting intellectual center, for the purpose of extorting confession, or for the production of what Dr. Hammond calls syggignoscism.

The primary effect of most anæsthetics in the majority of individuals is to produce at a certain stage a reminiscent condition, or a state of mentality when ideation is stimulated, with abolition for the time of the controlling or regulating faculties which in the completely conscious state enable the patient to accommodate himself to his surroundings and preserve his conventional poise. Those who have used ether are cognizant of a state of mind which is sometimes an early manifestation of anæsthesia. I allude to the stimulation of expectant attention, and the use of language which betrays the formation of more or less coherent ideas in relation to the operation or the condition of the patient. The subject may be perfectly unconscious of his surroundings, and the presence of his friends or physician, so far as his perceptions are concerned. There is in reality a state of ideational activity with some degree of sequential order of expression, such as we find in hypnotism or somnambulism, but perhaps it indicates a more complex process than in either.

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[*] Read before the Section in Neurology of the New York Academy of Medicine, December 9, 1887.

[†] "Vierteljahrschrift für gerichtl. Med.," July, 1879.

Besides the abolition of conscious perception, chloroform is stated by different observers to have a variety of psychical effects. These statements are, however, to be taken with some allowance, for they are generalized. In the first stage, says Ott, "the physical forces are increased, attended with singing, profanity, laughing, and so on." Anstie * describes the intellectual changes that indicate the effects of chloroform, and agrees that there may be a primal excitement of ideas; but I will not occupy your time with reference to facts so familiar to all.

For ten years or more I have studied the effects of nitrous-oxide gas, besides having used it in a great number of cases,† and I have come to regard it not only as very valuable in the treatment of insomnia and allied states, but as a psychopathic agent of the greatest value in hysteria and certain forms of insanity. Dr. Mitchell, ‡ of Edinburgh, whose experiments have been varied and complete and whose observations are reliable, calls attention to its peculiar effects upon the mind.

Where no suggestion is made, the effect in melancholic cases is usually of an exhilarating kind—not only during the administration, but afterward. I noticed this some years ago at Blackwell's Island, and Dr. Mitchell, of England, reports four cases of melancholia where happy ideas took the place of those of a depressing nature. Simple questions were asked, but none of a suggestive character. It would be quite likely, as was the case with a patient who was asked if she was not happy, for an affirmative reply to be given. In cases of dementia the subjects, when under the influence of the gas, referred to past events, even after a long period of incoherence and apparent vacuity, but when the effects of the gas had passed away the ordinary dullness and mental confusion returned.

Mitchell alludes to the susceptibility of the mind to suggestion, the exaggeration of mental or bodily activity, and the tendency "to dwell on and intensify any power or thought, or series of automatic acts."

The value of nitrous-oxide gas as a means of diagnosis was suggested accidentally to me by a case of insanity with concealed delusions. I have invariably found, when the patients studiously avoided betraying their mental weakness from fear of asylum detention or commitment, or when there was no such restraint—in one case the simple suggestion of the suspected condition, and in the other the mere establishment of the first grade of intoxication—that they would give prompt expression of not only delusions, but sometimes hallucinations. The particular form of monomania would be intensified, and even new applications of the dominant false idea would be made.

I will refer to two cases of undeveloped insanity in which the diagnosis was a difficult one until I used nitrous oxide.

CASE I.—Mrs. ——, a woman of forty, has been under my care for nearly a year. She has suffered from migrainous headaches, which were most intense and frequent after menstruation. She was nervous, in the popular sense, and emotional, and vented her superabundant energy in a variety of little acts, such as clinching her hands, biting her lips, and changing her seat frequently. There was an intensity which suggested a restrained mental excitement. She was very fearful of becoming insane and of sequestration in an asylum. Repeated conversations failed to show any intellectual weakness, and there was no irregularity in her behavior that would warrant any interference with her liberty. She seemed to entertain rather bitter feelings toward her husband and brother, but under ordinary circumstances no one would attach any importance to her statements. I ascertained that there was no great cause for her animosity, though the husband was rough and uneducated, and the brother was rather selfish. At nearly every visit, however, she expressed her feelings upon this subject, but I was unable to get her to give any substantial reason for her dislike. As she was troubled with insomnia, I determined to use nitrous oxide and air, in the proportion of two parts of the former to one of the latter, a number of hypnotics having failed to procure sleep. After she had taken a little more than two gallons of this mixture she became slightly excited in manner, talking to herself, and suddenly seizing her dress she drew it up and looked intently at it, saying rapidly and excitedly, in a high-pitched voice: "There it is! blood! blood! They will kill me! Save me!" When I remonstrated with her and asked her to whom she referred, she said: "John and Edward" (her husband and brother). "They are trying to kill me because I will not do what they wish me to. Oh, they are after me day and night. I see it! blood! blood!" I tried to reassure her when she refused to change her false beliefs, and she talked with me irrationally but coherently for some time. When the gas was pressed she became quiet, lapsed into a deeper condition of unconsciousness, and awoke without any recollection of what had occurred, but was apparently her ordinary self.

I tried diligently to ascertain whether she had ever made any attempt upon her life, but was met with persistent denials. When under the influence of the gas she upon one occasion admitted that one night she had in desperation tried to cut a blood-vessel, but had become frightened by the sight of blood and the pain. She quite willingly raised her sleeve and showed me a red cicatrix.

In the course of a few months her morbid mental condition became so marked that she was sent to an asylum, and is a violent and I fear incurable patient.

CASE II.—Mary P. is a young Irish girl. She has, according to her friends, been "queer" for several years, and, though she has done nothing of a decided character, has alarmed her friends

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* "Stimulants and Narcotics," p. 304.

† I have administered it several thousand times.

‡ "West Riding Lunatic Asylum Reports," vols. i and ii.

because of her religious depression. She came to my office twice, and upon both occasions was on her guard. When taxed with the behavior which had led her friends to seek medical advice, she not only denied it, but laughed at their interpretation. She admitted having done some queer things, but explained them in a way that made me regard her case as purely hysterical. Dissatisfied with an interview of nearly an hour, I administered the gas, giving her a half-bagful, when she burst into tears and wrung her hands. She declared that the priest had selected her specially for condemnation and that she did not dare to go to church, that she was damned, and, though I argued with her, I could not influence her. She talked freely, and I was able to make a diagnosis of religious melancholia. In both these cases my conclusions were borne out by ascertained previously expressed delusions and by subsequent mental disturbance.

In other cases the suggestion of a train of ideas just before the gas is administered is likely to develop into the expression of the dominant but concealed delusions. The philosophy of this is explained by Dr. W. C. Bunker,* a dentist of Oregon, Ill., who details his own experience with nitrous oxide while in the dentist's chair:

"Requiring the extraction of a tooth from my own mouth, I went to a brother dentist and had the gas administered. While taking it, and while under its effects, I was perfectly conscious; heard every word said, but was powerless to move a muscle. I knew when the inhaler was removed and the forceps taken up and adjusted, but felt no pain. The tooth was broken off, and two more ineffectual efforts were made to extract it. Still there was no pain. At this instant I regained control of myself, retaining a knowledge of all that had transpired.

"This experience impressed me with the conviction that if patients heard and understood, they could be made to obey. It had been the habit with me to test the condition of my patients during the inhalation of the gas by requesting them to raise the left arm. They usually responded, some continuing to raise and lower the arm until the effect of the gas passed off, seeming to be impressed with the idea that they must do so.

"The next occasion I had to administer gas I made the usual examination of the mouth, and, after learning which teeth I was required to remove, I turned abruptly to the patient and said: 'If, while you are under the influence of the gas, you hear me request you to open your mouth, do so. You can, if you understand now that it will be necessary.' I said nothing about raising his arm, but just as I thought he had inhaled enough gas, I said: 'Raise your left arm,' and was surprised to see that, instead of doing so, he promptly opened his mouth wide. As his breathing indicated that he had enough gas, I dropped the inhaler and extracted the teeth. After he regained consciousness I said: 'Did you hear me ask you to raise your arm?' He said: 'I heard you tell me something, and as you had charged me to open my mouth if asked, I thought that was what you wanted."

"I have taken advantage of this experience ever since—some three years—and have yet to meet the first failure. After charging a patient to respond by opening the mouth when told, I proceed to administer the gas, and just before he passes under its influence I say: 'Remember and open your mouth when I tell you to.' Thus, the last thing the patient thinks of is opening his mouth, and almost invariably it is the first thing he does. I have tried the command without previous instruction and failed to obtain a response."

One advantage of this procedure is, that the patient who before the administration of the gas is able to be at large and retaining considerable self-possession, knows nothing of his behavior while under the effect of the nitrous oxide unless told. It must be seen how valuable is this method of examination not only in medicine, but as a medico-legal test. Hypnotism at best is unreliable and inexact, and a scientific amusement. Its use is in some ways unjustifiable, and in the event of failure makes the operator ridiculous. I suggest the primary anæsthesia of nitrous oxide in cases of suspected insanity, and believe many lives could be saved and much mischief averted by the early recognition of suicidal and homicidal delusions in persons now at large. I have not tried it as yet in puerperal insanity of the light type, but believe it will often reveal the delusions and mental states which so often result in explosive acts of violence, and which lead to infanticide—a crime which is so often supposed by ignorant juries to bring with it responsibility when such is not the case.

These cases are simply presented to call attention to the very important advantages of this agent, and to urge its trial upon the members of this section. I hope, however, that the point I insist upon will be borne in mind—viz., that the gas is not to be used for the mere production of an undefined and chaotic mental state. With this as well as any anæsthetic we may produce mental confusion, when the utterances of the patient are ill-regulated and valueless. It is the primary stage of mental exaltation that is to be produced, which does not necessarily bring with it complete abolition of consciousness. In a future paper I hope to detail cases which demonstrate how valuable a therapeutic measure it is in various mental disturbances, when the good is effected by the diversion of morbid thought or the temporary suspension of memory.

THE INTERNAL ADMINISTRATION OF BICHLORIDE OF MERCURY

AS AN ADJUNCT TO THE LOCAL TREATMENT OF CIRCUMUTERINE INFLAMMATIONS.*

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Any one who has any experience with minor pelvic troubles soon learns that a great many cases are met with in which the usual local treatment, combined even with tonics internally, fails to bring about relief of the distressing symptoms, to say nothing of effecting a cure. The great majority of these cases usually offer a history which shows that the trouble came on insidiously after parturition, a miscarriage, or lifting a heavy weight, and the woman is unable to state definitely when she began to feel ill. On examination, there may or may not be a discharge from the cervix, which perhaps exhibits an insignificant tear and a scarcely perceptible degree of hypertrophy. The uterus may not be in ideal position, but still there is no marked displacement. Its mobility, however, is usually impaired, and to one or other side or behind it is commonly found a fullness or induration, which is moderately sensitive. In a great number of the cases one or both ovaries may be easily reached with the examining finger. They are found apparently enlarged and extremely tender. On one side of the uterus, usually the left, an oblong, irregular mass is not infrequently detected. This is commonly looked upon as a dilated tube, but, in my opinion, from the great frequency of its being on the left side, is just as often the sigmoid flexure. The patients have many and varied complaints to make, the most prominent and constant of which is of pelvic pain. One is at a loss to account for the number and variety of subjective symptoms depending upon such ill-defined physical signs. Should the case be diagnosticated as oophoritis, salpingitis, pelvic cellulitis, pelvic peritonitis, endometritis, or laceration of the cervix? I venture to say that the diagnosis of each of these conditions would be made according to the fancy or theory held by the consultant. In order not to enter upon the vexed question of the pathology of these cases, I will call them chronic circumuterine inflammations, as, in my opinion, the root of the affection consists of a diffuse or circumscribed effusion of inflammatory products into the various structures surrounding the uterus. I should concur in the main with the description given by Professor Polk in a recent masterly paper on "Peri-uterine Inflammation" ("Transactions of the Association of American Physicians," 1886, pp. 145–170): "They consist," he says, "of pelvic masses composed of the tubes and ovaries, and sometimes adjacent viscera, the whole being united by recent or organized lymph, the interspaces in acute cases, and sometimes in chronic cases, being filled with a serous exudation."

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* "Dental Cosmos," October, 1886.

* Read before the New York Academy of Medicine, Section in Materia Medica and Therapeutics, December 23, 1887.

Regarding the cure of these complaints by local treatment, let us hear what Dr. A. F. Currier, a former interne of the Woman's Hospital, has to say ("New York Medical Journal," March 6, 1886):

"In many of the chronic cases of pelvic inflammation we are powerless to produce a cure by the ordinary means of local treatment. All honor to Dr. Emmet for suggesting * the continued application of moist heat to relieve such conditions, and no man can spend eighteen months in the Woman's Hospital without being convinced of its great value. Similarly no man can pass through that experience without seeing patients in whom this as well as other means of local treatment is ineffectual." I could, if it were necessary, quote many others to corroborate the concluding statement in the last sentence, but I deem the foregoing observation sufficient for my purpose and of particular value, inasmuch as it was made in an institution where local treatment is carried out more systematically and scientifically than in any similar institution in the world.

My attention was first directed to the value of the internal administration of bichloride of mercury in pelvic inflammations by the striking results of a case that was under treatment at the gynæcological class of the out-door department of the New York Hospital.

I must here express my indebtedness to Dr. J. H. Emerson, the attending gynæcologist, for allowing me to make use of the case records and for the privilege of carrying out my observations. The history of the case referred to, briefly, was as follows:

N. M., thirty-six years of age, married ten years, had her first and only child nine years ago. The child was born at full term, but lived only an hour. A year afterward she had a miscarriage at eight weeks without any apparent cause. This was followed by pelvic cellulitis, which resulted in an abscess that opened spontaneously into the rectum. On recovering from this, she enjoyed good health for three months, and then began to suffer with nausea and vomiting, but had no pain nor fever. She was now treated as an inmate at the Woman's Infirmary, leaving it at the end of three months, restored apparently to perfect health. She remained in a state of good health for five years, gaining flesh and strength, and never having felt better in her life. In February, 1885, on walking across the cold floor one night in bare feet, she was suddenly seized with pain in the right groin extending to the back. A few days afterward metrorrhagia set in. On presenting herself for treatment at the dispensary on February 21, 1885, a physical examination showed the uterus to be slightly restricted in its mobility and in a position of retroflexion. There was some discharge from the cervix, which was moderately lacerated. She improved but very slowly under the local applications of iodine, glycerin tampons, hot-water douches, and the internal employment of tonics. She ceased attending in July of the same year, and returned for treatment the second time on May 15, 1886, with the statement that she had been feeling somewhat better for a time and then gradually grew worse. The following symptoms were now present: Anorexia, cough, hectic fever, night-sweats, great debility, pain in both groins, and frequent and painful micturition. A digital examination detected closely connected with the uterus and surrounding it on all sides an extensive exudation, which was excessively tender and as hard as a cricket-ball. From this date up to the following December local treatment was faithfully carried out, and the patient was given internally cod-liver oil, iron, quinine, strychnine, and other tonics. But, in spite of all these, she gradually grew worse, both as to her local and as to her general condition. She was becoming unable to do her household duties, which were light, and a state of invalidism was slowly gaining upon her. In sheer desperation and partly on account of a superficial anal fissure she was sent to the out-door surgical department of the hospital. There the attending surgeon thought he detected evidence of syphilis, and accordingly placed the patient upon a mixture containing one sixteenth of a grain of bichloride of mercury and eight grains of iodide of potassium in each dose, to be taken thrice daily. From this on the patient began to improve, coming occasionally to our department to have a local application made.

May 12, 1887.—The patient has improved considerably and is gaining flesh. The pelvic exudation seems to have undergone some absorption. It is certainly less extensive, and is not nearly so hard nor so tender as it was. The most careful examination detects no fluctuation. She continued taking the foregoing mixture off and on during the summer, and I saw her again about two months ago, when she was still improving, growing stronger and gaining in flesh. She was now doing her housework with comparative ease, and, unless she worked very hard, she was free from pain. Of course the pelvic mass was far from being entirely absorbed. It is questionable if anything short of a laparotomy would completely remove it.

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* The term "suggesting" is a mild expression for Dr. Emmet's labors in this direction. Honor and credit *are* due him for his persistency at every opportunity in fully impressing the profession with the value and importance of hot-water douches to promote the absorption of pelvic inflammatory exudations and to improve the circulation of the pelvic blood-vessels. Others may have made the suggestion, but he alone is entitled to all the glory which attaches to the incalculable good the method has wrought for suffering womankind.

I repeatedly interrogated the patient afterward, who was both frank and intelligent, regarding indications of a syphilitic taint, but failed to find any, excepting the early death of her child and the subsequent miscarriage. These events, as we know, do not necessarily point to syphilis in the mother. On the other hand, the seizures of pelvic inflammation were brought on by well-known causes—the first by a miscarriage and the second by exposure to cold. In the light of these facts, though with all deference to the diagnosis made by the surgeon, the conclusion was forced upon me that the patient's improvement was due to the resolvent powers of the drugs she was given and not to their antisyphilitic properties. Admitting, even for the sake of argument, that she had been the subject of syphilis at a former period, she was then suffering from an extensive plastic exudation which surrounded the uterus on all sides, like a thick wall of hardened plaster of Paris, and this was gradually sapping her life. The mass was hard and sensitive, and behaved exactly like inflammatory exudations which are known for a certainty to be non-syphilitic. If the administration of the bichloride of mercury and the iodide of potassium proved so efficient in this patient, I ask myself, Why should these drugs not prove equally efficacious in pelvic exudations in patients without a suspicion of syphilis? At any rate, I determined to supplement the local treatment of every case of circumuterine inflammation that came under my care by the internal employment of one of the drugs—the bichloride. Accordingly, during the past summer, during Dr. Emerson's absence, while in sole charge of the class, I gave the bichloride in thirty odd cases, besides giving it in several cases in private practice.

I will narrate the histories of a few cases condensed from full notes made during treatment.

Case I.—R. H., thirty-nine years of age, married twelve years, presented herself at the dispensary on August 12, 1887. She had had one child eleven years before. For the past five or six years she had been suffering with pain in the left groin, frequent micturition, a sense of fullness in the vagina, and a slight cervical discharge. Headache was almost a constant symptom. These symptoms came on gradually some time after having lifted a heavy weight. This was the only cause she could assign to them. Of late her household duties were becoming very irksome. Walking was particularly painful and had almost to be given up. Two years before she had been treated for two months at the clinic of the Woman's Hospital with temporary benefit. On examination, the uterus was found in fair position but restricted in its mobility. Behind and to the left of the uterus an indistinct induration, which was excessively tender, could barely be reached by the examining finger. The routine local treatment was carried out, and the patient was given gr. $\frac{1}{24}$ of the bichloride three times a day. She took the medicine continuously, and was treated twice weekly until September 1st, when the following note was made: Patient is entirely free from pain and able to do her duties without discomfort. The mobility of the uterus is found much freer, and no trace of the sensitive induration can be discovered. On December 7th I called at the patient's house and learned that she had remained free from pain excepting when having walked a great distance or having worked unusually hard. She voluntarily remarked that she had not been so free from pain and nervousness since her trouble began, six years before.

Case II.—L. B., thirty-two years of age, a strong, healthy-looking woman, came to the dispensary on April 21, 1887. She had been married seven years, but had not lived with her husband for some time past. Shortly after marriage she had a miscarriage at three months, which was followed by chills and fever for a week, but, as far as she knew, there had been no abscess formation. For the past two years she had complained of pain in the left groin and in the back, of a feeling of heaviness in the limbs, and of tiring very easily. Latterly she had been unable to follow her occupation of making artificial flowers, by which she had earned her livelihood. She was very nervous and depressed in spirits in consequence. Examination showed the uterus to be freely movable, measuring three inches, and in normal position. The cervix looked healthy. The left ovary could easily be felt in Douglas's *cul-de-sac*, and was enlarged and extremely sensitive. During the first month the routine local treatment was assiduously carried out at the dispensary and by the patient herself at home. There was little or no improvement. At one visit she might be better, but at the next she would be as bad as ever. The bichloride in $\frac{1}{24}$-grain doses, combined with five grains of iodide of potassium, was then ordered. From this on improvement became decided. The potassium salt was left out of the mixture after a few weeks, as it was producing coryza, and she continued taking the bichloride alone for about two months longer, having the local applications made once a week or once every two weeks. After she had been under the combined treatment for a month, the pain and tired feeling had entirely disappeared, she grew less nervous, became quite buoyant, and said she felt like another being. She now resumed her former occupation, and starvation no longer stared her in the face. She continued, however, coming to the dispensary at very long intervals, until October 25th, partly to be treated for slight gastric disturbances, but chiefly to let me know how well she was getting on and how grateful she felt for the improvement. On October 4th it is noted: The left ovary can scarcely be felt with the finger. There is still some slight tenderness in Douglas's *cul-de-sac*.*

It would probably be going too far to say that the patient is entirely cured, but she has been rendered free from pain, and she has been able to follow her occupation for a period now extending over six months. Removal of one or both ovaries might not have done as much for her. Those eager to perform that operation would have found ready at hand the usual reasons urged as justifying it, in the long-continued pain, in the great nervousness and mental depression, in the inefficacy of local treatment, and in the inability to earn a livelihood (which was a necessity with her) that the case presented.

Case III.—L. W., twenty-six years of age, a thin, delicate married woman of a highly strung, nervous temperament, came to the dispensary, May 10, 1887, complaining of pain in both groins, pain in the back, leucorrhœa, great weakness, and inability to do her household duties, which were not very onerous. These symptoms had first manifested themselves five years before, after the birth of her first and only child, and had been aggravated by an induced miscarriage the previous June. She had been treated at various times and places with temporary benefit only. On examination, the left ovary, considerably enlarged and extremely tender, was found low down in Douglas's *cul-de-sac.* Apart from some erosion of the cervix, nothing else of an abnormal nature could be detected in the pelvic organs. The usual local treatment was followed out, and various devices were adopted to hold up the enlarged and prolapsed ovary until August 27th, with but slight relief. She was now given gr. $\frac{1}{24}$ of the bichloride, with ten minims of tincture of chloride of iron, three times daily, the local treatment being kept up. The patient is still under observation. She is quite free from pain, peforms her household duties, and has improved in every respect, but she has not by any means been made a strong and robust woman. I am quite certain, however, that no operation devised by human skill would consummate that much-desired state.

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* I saw the patient again on January 5, 1888, and she then declared herself entirely free from pelvic pain.

Case IV.—E. R., single, eighteen years of age, presented herself at the dispensary, December 4, 1886, for severe dysmenorrhœa, which was found to be attended with vaginismus. This condition was successfully treated by gradual dilatation, and the dysmenorrhœa ceased. On July 30th of this year she returned, saying that three weeks before, while bathing in the surf, she had been seized with pain in the left groin, which had continued ever since. Metrorrhagia had set in shortly afterward, and she was flowing at the time of the visit. She was instructed to go to bed and have hot-water douches given her twice daily, and was ordered suppositories of opium and a mixture containing gallic acid.

August 2d.—The flowing ceased on the 31st of July, but the pain in the groin is no better. The uterus is fixed, and the vaginal vault feels as hard as card-board and is extremely tender. She was now given the bichloride mixture, and told to remain quiet at home for a week.

August 29th.—The pain left her in a few days, but was brought on again last night by dancing a great deal. There is still considerable tenderness of the vaginal vault, but it does not present nearly the same hardness as when first examined. In about a month later all tenderness and hardness of the vault had disappeared, and any one examining the patient for the first time could have detected no evidence of a former attack of pelvic exudation.

In such cases as the foregoing, where the products of inflammation seem to be poured out into the submucous tissue and into the cellular tissue and peritonæum contiguous to it, local treatment of itself, combined with rest, is commonly followed by tolerably rapid resolution.

But in my experience it is seldom that the resolution is so complete as it was in that instance in the short space of two months. Some tenderness and hardness usually remain for a long time. When it is borne in mind that the patient had been on her feet and about excepting a few days, and that she even had attended dances, it will scarcely be denied that the absorption of the inflammatory material was unusually rapid.

The next case is instructive in that it shows that a short course of the remedy may serve as an important means to distinguish between the pelvic pain caused by hysterical hyperæsthesia, by neuralgia, and by inflammatory exudation.

Case V.—L. B., thirty years of age, married five years, sterile, came to the dispensary on May 3, 1887. Menstruation was regular and only moderately painful. Ever since marriage she had suffered with pains in the left groin and in the hypogastrium. She was a healthy-looking woman, with good digestion and circulation. A physical examination revealed a freely movable uterus, but in a position of retroversion. There was considerable hyperæsthesia in the left parametrium, but no fullness or induration was appreciable. She had been treated for a considerable time at the Woman's College Infirmary without any relief to her symptoms. The uterus was easily replaced. A suitable hard-rubber pessary was adjusted, and the patient was ordered to take hot-water douches daily. Although the pessary gave rise to no local discomfort, and retained the uterus in good position, the patient continued to complain of the pain in the left groin and in the hypogastrium. Suspecting a neurotic or hysterical tendency, her nationality and race—she was a Galician Jewess—favoring that opinion, various antispasmodics and nervine tonics were administered until July 28th, a period of ten weeks. But the subjective symptoms remained uninfluenced. The bichloride mixture was now ordered. At the next visit, a week later, the patient, of her own accord, declared herself to be freer from pain than she had been before. A week still later she was entirely free from pain, and ceased attending.

Whether the improvement has been permanent or not I can not positively say, for I have not been able to find the patient at the address she gave. But it may be fairly assumed that the relief from pain has continued; for, if she persisted in attending nigh three months without obtaining relief, it is more than likely that she would come back for treatment in the event of a return of the pain, after having it once entirely removed.

Bearing on the same point of differential diagnosis as the foregoing case, the following history of a private patient is of considerable interest. The result, however, was different: the bichloride proved of no avail, while antispasmodics had the desired effect:

Case VI.—D. S., twenty-six years of age, married six years, consulted me on April 19, 1887. Shortly after marriage she thought she had had two very early miscarriages, but since then she had been sterile. At about the same period she began to suffer with great nervousness, with pain in the left groin, which radiated to the hip of the same side, and she said that she noticed a fullness in the left groin which would come and go. She had a profuse discharge, and micturition was frequent and painful. Other symptoms, to any number, could be furnished on the mere asking. She was, however, well nourished, and presented anything but an invalid appearance. She had been for over a year under the care of a recognized gynæcologist of this city, who on one occasion examined her under ether and told her that she had an abscess in the left side, for the removal of which laparotomy would be necessary. This advice, I think, I rightly interpreted as meaning the removal of one or both uterine appendages, the abscess doubtless referring to the diagnosis of pyosalpinx. A very careful and thorough examination detected nothing more than an anteflexed uterus, with a long cervix, from which exuded an abundant thick tenacious discharge, and an ovary which perhaps was somewhat enlarged. Bimanual palpation was easily carried out, as the abdominal walls were flaccid and the patient offered no resistance, but after the most careful search neither tube could be palpated. The patient attended faithfully all summer, and I tried one thing after another, some of which were dilatation of the cervix, local applications, the adjustment of a pessary, and hot douches *ad nauseam.* The bichloride internally was also given for a period of two or three weeks. The cervical catarrh was very much improved, the flexure in the canal was considerably reduced, but the patient still complained of the same subjective symptoms. I then determined to make a trial of antispasmodics. The administration of asafœtida and valerianate of zinc for two weeks was followed by the disappearance of the pain and of most of her complaints. She continues coming to the office to be treated for the cervical catarrh, but beyond this there are no symptoms referable to the pelvic organs.

It is difficult to speak dispassionately of the advice given in this case. It would have been a criminal act, in my mind, to remove the uterine appendages from that patient.

Time will not permit me to narrate the histories of all the cases in which I have used the bichloride internally, but the majority of them resembled in most respects those cited. The remedy combined with local treatment cured some of the patients, and certainly improved all where the symptoms could be definitely traced to circumuterine inflammation. When a patient failed to improve under the combined treatment, I looked upon the diagnosis as unsound, and accordingly changed it and the plan of treatment, and mostly with good results. Of course, when there is any considerable degree of inflammation around the uterus, the diagnosis offers no difficulties, but cases often present themselves in which even the most skilled gynæcologist fails to detect any induration and yet the symptoms may be due to a circumscribed inflammatory process situated deeply within the pelvis. Every one knows how extremely hard it is at times to decide whether a pelvic pain is due to a neurotic condition of the patient, to neuralgia, or to an inflammatory exudation. It is just in such cases that I found valuable assistance in forming a diagnosis from a two or three weeks' administration of the bichloride.

On looking up the literature of the internal employment of resolvents, especially mercury, in pelvic exudations, I was struck with the fact that, while the men of the past generation had put great faith in them, the gynæcologists of to-day—with some notable exceptions—either spoke of them with faint praise, condemned them, or mentioned them with ill-concealed contempt and scorn. It would thus seem that fashion rules medical men almost as much as it does the milliner's art. And it would also appear that skepticism in the medical mind in one direction leads to over-abundance of belief in another. Topical applications and the removal of the uterine appendages are in the ascendancy at present. Their advocates sneer at the idea that a small quantity of a drug given systematically can have an alterative or a resolvent effect, though the accumulation of past and present experiences makes such a supposition reasonable. But these same men place implicit faith in the efficacy of the removal of apparently healthy ovaries for the relief of obscure nervous troubles and of pelvic pain, because, they argue, we know so little of the influence of these organs upon the nervous system. But there are other organs in the economy besides the ovaries whose influence upon the nervous system is still involved in obscurity. Why should they escape? What radical means shall we adopt for the cure of hysteria, epilepsy, and other ill-understood nervous affections in the male? No man has yet been bold enough to suggest castration; but the turbinated bones in the male subject have been made to suffer a double punishment.

I do not think that I underestimate the value of local applications in promoting the absorption of inflammatory exudations situated within the pelvis. But it is no more difficult for my mind to comprehend the *modus operandi* of resolvents given by the mouth than it is that of iodine and boro-glyceride applied to the vaginal mucous membrane in influencing the products of inflammation situated at some distance from the surface to which the application is made.

A few words on the mode of administration. In dispensary as well as in private practice the following mixture was usually given: Bichloride of mercury, 1 grain; tincture of gentian, 1 ounce; water to 3 ounces. Dose, a teaspoonful, in water, three times a day after meals. The patients took the mixture readily, and no complaint was made on the score of its taste, with only one or two exceptions. Some of the patients took the remedy in the stated dose continuously for four or five weeks without the slightest evidence of mercurialism. It was usually then omitted for a week, more for precaution's sake than on account of any untoward effect of the drug. On the contrary, the appetite of the patients while they were taking it usually improved, as did also their digestive functions. When anæmia was present, the bichloride was combined either with tincture of chloride of iron or with reduced iron in the form of a pill. In some cases I gave as much as one sixteenth of a grain—a dose which the patients seemed to bear as well as the smaller one.

From the foregoing observations the following conclusions, I think, are warranted:

1. The use of bichloride of mercury internally forms a valuable aid to the local treatment of circumuterine inflammations.

2. In the doses necessary for its resolvent effect the drug may be given for several weeks without any untoward constitutional manifestations.

3. In some cases where the inflammatory products are deeply situated within the pelvis the internal use of the drug seems to be more efficacious than the most approved local treatment.

4. A short course of the drug often serves as an important means for the differential diagnosis of the various obscure conditions which give rise to pelvic pain.

123 East Fifty-ninth Street.

Rabies among Children.—"Alarmed at the increase of rabies among children," says the "British Medical Journal," "the Board of Health in Paris recently appointed a committee to inquire into the matter. The report by Dr. Ollivier, recently published, attributes the frequency of hydrophobia among children to the fact that children, as a rule, are fond of teasing and playing with dogs, and that dogs suffering from rabies are peaceful during the incubation period provided they are left alone, but their bite is none the less serious if irritated. To remedy this it has been decided by the authorities to issue a circular throughout both Paris and the provinces, enjoining parents, under various penalties enacted by the law, to keep a strict watch over their children, to prevent them fondling or teasing dogs, and in every case of biting to report the fact immediately to the commissary of police, who will proceed at once to have the animal seized, and, if necessary, killed. But would it not be easier and more effective in France as in Germany to carry out a universal muzzling order, effective over the whole country, and continuing for a considerable space of time?"

A CASE OF LARGE CYSTIC TUMOR OF THE KIDNEY REMOVED BY ABDOMINAL SECTION.

RECOVERY.[*]

By A. VANDER VEER, M. D.,
PROFESSOR OF SURGERY AND CLINICAL SURGERY, ALBANY MEDICAL COLLEGE.

Miss B. D. B., aged twenty, single, native of Ireland; occupation, domestic. Admitted into the Albany Hospital, September 17, 1887. Residence, Ballston, N. Y. Family history, no diathesis could be determined. The whole family were remarkable for robust constitution and longevity. The history derived from the patient was that she had always been well and strong. She first menstruated at fifteen; the flow was scanty and painless, but regular. An enlargement of the abdomen was first noticed five years ago. She states that the tumor commenced in the middle of the abdomen, and was hard. Three years later the tumor had grown very much, and was tapped five times at frequent intervals, and a large quantity of dark, frothy fluid drawn each time. After the last tapping the sac did not refill until the spring of 1887, when she began to enlarge rapidly. When first ill she suffered from amenorrhœa for a year, since which she has been regular. Since the tumor appeared the patient has passed but little urine, and during the summer had a complete suppression for three days.

Operation, October 3, 1887.—The patient was removed to a private room, previously thoroughly cleansed, and the abdomen opened by Dr. Vander Veer, assisted by Dr. Boyd, Dr. Townsend, Dr. Hoadley, and Dr. McDonald, Dr. Grant Bey, of Egypt, and others being present.

The cyst was exposed, found adherent, but tapped in the ordinary way, and five quarts of clear fluid were withdrawn. It had been diagnosticated as ovarian. The process of enucleation was very tedious, a large number of ligatures was introduced, and when working for the pedicle the right kidney was reached, and the cyst's origin made out. The pelvis of the kidney, together with the vessels, was included by a single ligature—the Tait knot—the kidney and cyst were removed, and the pedicle, which was made up of renal vessels and was very large, was returned to the abdomen. The pelvic organs were bound down by adhesions, but otherwise were healthy. No great oozing from the adhesions took place. The abdomen was closed with nine deep sutures, and dressed with iodoform strips and Gamgee pads. Time of operation, one hour and forty minutes.

The patient reacted nicely from the operation, but complained of some little pain. At 6.20 P. M. she voided ten ounces of urine, and slept two hours and three quarters during the afternoon. During the night she slept five hours and a half without an anodyne. On the evening of the second day there were some rise of temperature and a quickened pulse. She was given one minim of tincture of aconite every hour, which was continued for thirty-six hours. On the third day the patient complained of little tenderness on the right side of the abdomen. The bowels were moved by an enema. Wound dressed. There wat little staining of the dressing. The patient was able to pass gas freely during her whole illness. An ice-bag was used for a few days to combat the slight rise of temperature. The turpentine enema was necessary to move the bowels. On the evening of the sixth day the temperature rose to 101° F., probably due to irritation produced by the removal of the deep sutures. Once, on the fifth day after the operation, a single evacuation of urine contained albumin and pus, after which is was free. A careful estimation of the urine voided daily for two weeks showed an average of twenty-one ounces a day. The quantitative estimation of urea showed an average excretion of three hundred grains a day.

After she was transferred to the ward she did not do so well for a few days. Afterward, under the use of tonics, she did well, rapidly gaining in strength and flesh. Her urine has been examined several times since and found normal, the daily excretion being about twenty-four ounces. The fluid drawn from the cyst was dark, of a specific gravity of 1·010 and neutral in reaction, and contained albumin, also paralbumin, and abundant chlorides, but no apparent amount of bile pigment. No cholesterin; urea approximately 2 per cent. Microscopically, nothing was determined. Subsequent to the operation, after diligent inquiry, it was found that the case had been previously treated by Dr. Lyman Rogers, of Bennington, Vt.

The following are extracts from a letter received from the doctor in response to inquiries made by myself:

"Miss B. D. B. was brought to my office some time in September, 1885, for examination. I found a large tumor in the abdomen. It evidently had its origin on the right side, in the vicinity of the liver, and extended down to a point on a line with the crest of the ilium, and across to the left side of the abdomen, some distance beyond the median line. The outlines of the tumor could be distinctly felt, particularly at the lower portion. I could feel the rounded form of the tumor so plainly that I thought it could not be ovarian, and the history that the attending physician and the patient gave me showed that it had grown from above downward. I first thought it was an enlarged liver, but after further examination satisfied myself that fluctuation existed. I thrust a hypodermic needle into the tumor, and brought out a syringeful of clear, colorless fluid. Two days later I saw the patient at her own home, when, upon examination, the tumor seemed less well defined. However, the needle of the aspirator was plunged into the tumor, and the fluid drawn off. Some three or four weeks later I was called to see her again, and found that the tumor had reappeared of about the same size as before. I aspirated again, and drew off about five quarts of clear serum. I think it was aspirated three or four times subsequently, at intervals of four weeks, when the tumor ceased to grow, and the patient regained her usual strength and vigor. I saw her, I think, about six months afterward in apparent good health. She showed no evidence of tumor. I learned subsequently that she had become insane, and was sent to an asylum, since which I had heard nothing of her until I received your letter. I regarded the tumor as a cystic growth, but from what organ it had its origin I had no positive opinion, except that it could not be ovarian or a parovarian cyst."

Could we have obtained from this patient the history that was given us by Dr. Rogers later on, I can not think that there would have been any possibility of our having been led astray in an early and prompt diagnosis. As it was, our patient has made a good recovery, and one has but to consult the London "Lancet," "The British Medical Journal," and our own American medical journals to find in them similar cases reported within the past year.

That the patient made so excellent a recovery I believe is largely due to the improved method of doing this operation employed at the present time.

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[*] For valuable notes kept of this case I am indebted to Dr. W. G. McDonald, of the Albany Hospital.

Oxynaphthoic Acid.—This acid is a powerful antiseptic, retarding putrefaction of the blood and urine even more effectively than salicylic acid, with which it agrees closely in chemical composition.—*Lancet.*

THE
THERAPEUTICS OF PULMONARY CONSUMPTION
BY DEBOVE'S METHOD OF SUPER-ALIMENTATION, AND BY BERGEON'S METHOD.

By HENRY B. MILLARD, A. M., M. D.

It is not entirely creditable to medical practitioners to discard, *violenter repenteque*, as absolutely useless, because they do not fulfill all expectations, methods of treatment which have repeatedly been found to be of value by physicians with the most extended facilities for judging, whose names are above reproach as regards the likelihood of supporting their theories by false pretensions, and whose favorable experiences have been publicly demonstrated by them. This willingness to decide against the practicability of the two methods designated in the title of this article, and unwillingness to employ them in certain cases where they are feasible, are sometimes undoubtedly to be attributed to the amount of time required for their employment and to the comparatively small number of cases to which they are applicable. Without the bestowal of considerable study and care, Debove's method can not be easily employed. The preparation of the beef powder so as to make it acceptable to the patient, the skillful use of the stomach-tube when it is employed, the regulation of the dose, the toleration of the treatment by the patient, and willingness as well as ability to submit to it, demand a great deal of time and patience on the part of the physician.

The literature, too, upon this subject in the English language is very limited, my own paper,* published in the "New York Medical Journal" of April 19 and 26 and May 10, 1884, being the only full or accurate exposition that has appeared. Some valuable accounts by Dr. Dujardin-Beaumetz, to which I shall allude again, have also been published recently. The advantage of intimate personal friendship with Dr. Debove and yearly visits to Paris have enabled me to represent the theoretical and practical features of his treatment correctly.

Another reason of the limited employment of this method in America is undoubtedly the fact that the *poudre de viande* made by Ferré is, on account of the cost of importation, duties, etc., somewhat expensive, and that it has been kept only, at my solicitation, by a few druggists. These last two difficulties, as I shall show, have, however, been quite overcome.

As to the value of Debove's method in some cases there can be no question. In the summer of 1883 I passed considerable time at the hospital of La Pitié and saw the *poudre de viande* administered through the tube by Debove, and also so administered it myself. I not only heard from him the clinical history of the cases, but questioned the *internes*, and also corroborated the testimony thus obtained by oral and physical examination of the patients. Some of these seemed nearly cured, and others had gained from fifteen to twenty pounds in weight. In many of these cases I saw verified what Debove states—namely, that, under the influence of super-alimentation,

1. Sweatings cease.
2. Cough and expectoration diminish and then disappear.
3. Patients gain in weight.
4. The strength returns.
5. Physical signs are modified; the signs due to pulmonary indurations or cavities subside, while those dependent on pulmonary secretions disappear. In acute and galloping consumption this treatment is useless. Fever is a contra-indication, unless it come on in evening exacerbations.

Further than this, several of my own patients have within the last four years recovered or been greatly benefited under this system of treatment. Artificial alimentation is not always easy—often, indeed, impossible; especially is this the case when there is ulceration of the larynx and the patient is very weak.

And here I will allude to the main features of Debove's system, as my paper, published a long time ago now, must have escaped the observation of many physicians. It was, however, republished by Parke, Davis, & Co., of Chicago, who I find have yet some copies on hand, which they will send free in case it is desired to study the subject thoroughly.

The essential features of Dr. Debove's system may be mentioned as:

Artificial alimentation by the œsophageal sound (*gavage*).

Super-alimentation, or alimentation by considerable doses of aliment, which, according to Debove, can be effected only by the sound, and

Lavage (washing or rinsing the stomach).

"Super-alimentation differs from artificial alimentation: by the latter we propose to nourish the patient, and to prevent the disastrous results of anorexia or vomiting; in the former, to introduce into the economy considerable quantities of food, and to increase organic combustion."

Anticipating somewhat at this point the description of aliments used by Dr. Debove, I would mention that the powder of the muscular fiber of beef is usually employed by him, being mixed with milk or hot water, so as to be of about the consistence of cream. Upon the excellence of the powder employed, and its proper preparation when administered, depends, most of all, the success of the treatment.

Other aliments than the powder of beef may be given by the sound, such as eggs in beef-tea, milk, etc.

Debove was led to the invention or preparation of powdered beef by the difficulty he experienced in making other articles of nutriment pass through the sound.

The two methods of administration consist in direct alimentation and forced alimentation, by the former method the food being given as any other food would be, with certain precautions and restrictions; by the latter, the food being introduced into the stomach by the œsophageal tube or sound, this being employed when anorexia, nausea, or vomiting exists to such an extent that nourishment can not otherwise be taken. Dr. Debove employs for the introduction of the mixture into the stomach a soft elastic tube, about three quarters of an inch in diameter, and having at the bottom two fenestræ; this part of the tube is twenty-two inches in length, and, although flexible, is of sufficient firmness to be introduced easily; at the opposite extremity to that which enters the stomach there is a joint, and the tube after this is of a softer consistence, this part being thirty-nine inches long and terminating in a funnel-like expansion; in this end a large glass funnel is placed, into which the liquid is poured. This tube is a modification by Debove of Faucher's, who invented it in 1878. It may also be used for rinsing the stomach (*lavage*), the principles and methods of which are given in another place.*

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* "Super-alimentation, Artificial Alimentation and Gavage, and the Employment of Alimentary Powders, according to the Method of Dr. Debove."

I will not here enter into detail as regards the mode of introduction of the tube and food, but will refer the reader to the reprint I have mentioned. Dr. Dujardin-Beaumetz, in his works entitled "Diseases of the Stomach and Intestines"† and "New Medications,"‡ both translated by Dr. Hurd, gives a valuable though not very full exposition of Debove's method, mode of using the sound, etc. This author concludes his chapter on this subject as follows:

"Thanks to gavage, we see the appetite return, the bodily weight increase, the strength come back, and the facts which Debove has published and those which I have noted indicate the great future in reserve for this kind of treatment, which is applicable to all cases where nutrition is at fault, and especially to tuberculosis."

Dr. Beaumetz in the above-mentioned works describes a modification of Debove's tube, rendering it, he thinks, easier of introduction, the modification consisting in a diminution of its length and caliber.

The powder can in many instances be administered *directly*—that is, without the intervention of the sound, but not usually in such full doses as when given by the latter.

"The question is often asked," says Debove, "if the sound is indispensable, and if super-alimentation can not be employed without it. It seems to me impossible to obtain super-alimentation, continued a sufficient length of time, if one simply forces the patient to *eat;* and precious time is thereby lost." #

Dr. Amanieux, of Paris, published in 1883 an elaborate treatise upon the direct administration of the powder of beef ("De la poudre de viande, son administration directe"), and his own experience is that it can always be given without the sound.

I am led to review rapidly some of the features of Debove's treatment in part by the perusal of an editorial article in the "Therapeutic Gazette" of September 15, 1887, entitled "A New Method of treating Phthisis by Super-alimentation," which in turn is inspired by a paper in the "Pharmaceutische Zeitschrift für Russland," 1887, No. 24, by Dr. Langowai, of the clinical staff of Professor Ostroumoff, of Moscow. This article describes Debove's method: "In his investigations, Dr. Langowai selected five cases of phthisis in the Moscow Clinic in whom every means of diagnosis proved the existence of the disease in pronounced form. It was found that those cases in whom the parenchyma of the lung was not badly diseased sometimes recovered perfectly, while the worst cases were maintained for a long time. He gave his patients (daily) an amount of the beef powder equivalent to three pounds of beef."

After this outline of the character and effects of Dr. Debove's treatment, I will now describe more fully the character and preparation of the powder to be employed, its therapeutic and physiological effects, etc. Debove prepared it by selecting beef as free as possible from fat, separating it from the tendinous portions, and passing it through a chopping machine, making a coarse paste, which was then spread on plates and dried in stoves at a temperature of 90° centigrade (226° F.). The beef, hardened by drying, is triturated in a mortar, and then passed through a fine sieve. The powder thus prepared is impalpable, dry, and can be preserved indefinitely, if carefully kept from humidity, and is almost without odor. To make one pound of the powder, about six pounds of fresh beef are required, and one pound of the powder is equal to at least four of pure muscular fiber. Of this, as much as 400 or 600 grammes have been given by Debove daily, the latter quantity being equal to five pounds of beef. This is *literally* super-alimentation, and, unless provocative of some disturbance, could scarcely fail to bring about all the changes attendant upon thorough nutrition. Such large quantities as 600 grammes are, however, not often attained, and only, I believe, by the sound.

Simple as its preparation seems, practically it does not appear so. I was shown at La Pitié numerous samples made by various chemists; they were either strong-smelling, nauseous, or unpleasant to the taste; some had putrefied, and showed under the microscope numerous living organisms; one, made from horse-flesh, had a repulsive odor, but not more than one of the other preparations made from beef.

That the qualities of purity and freedom from disagreeable taste and odor are important, especially when the powders are used for direct alimentation, is evident when it is considered that they are usually administered where there is antipathy to food, with perhaps nausea and vomiting. Dr. Debove used exclusively for a considerable time a preparation made by J. Ferré, a distinguished *pharmacien* of Paris; he considered it perfectly satisfactory, and even better than that made by himself. I have had a package in my possession for two years, and, although it has for a year lain open in my office, it has undergone no deterioration.*

I am glad to be able to state, however, that Parke, Davis, & Co., after experimenting nearly two years, have succeeded in making an article in all respects equal to that of Ferré. The retail price is one dollar a box of half a pound. It must be considered that eight ounces of the powder are equivalent to two pounds and a half of the fillet of beef, which would not be sold at less than fifty cents the pound.

Other modifications of the powder recently manufactured by Parke, Davis, & Co. are a mixture of this powdered fibrin with a small quantity of chocolate, and also

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* The author (*loc. cit.*).

† New York, William Wood & Co., 1886.

‡ Detroit, George S. Davis, 1887.

The author, *loc. cit.*

* The author, *loc. cit.*

powdered beef, which represents the fibrin, together with all the salts and all the extractive contained in fresh beef.

It is not my purpose in this article to recapitulate fully the theories and experiences of Debove, nor my own account as drawn from my observations and from various French writers. The reprint I have mentioned, and the writings of Dujardin-Beaumetz, will afford all the information required. I desire simply to bring to the notice of my fellow-practitioners the fact that Debove's method is none the less promising and useful than when first introduced, and to awaken in them a new interest in it. Certainly to its employment some of my patients are indebted for great relief or recovery.

I will conclude this article by an extract from Dr. Dujardin-Beaumetz relative to this subject (*loc. cit.*):

"As for alimentation, the method first brought into vogue by Debove has proved to be of the highest utility, and it is to-day generally admitted that, in certain cases where the integrity of the digestive tube is complete, one may, by super-alimentation, obtain amelioration and even cure in pulmonary consumption. The important communications of Broca and Wins have given us many conclusive observations to this effect, and my pupil, Dr. Pennel, published in 1882 a series of cases where the beneficial action of forced feeding was most manifest."

BERGEON'S METHOD.—The difficulties and objections in the way of the proper employment of this method are many, while the proportion of cases likely to be benefited is small. It would, nevertheless, be a defective mode of practice, and not in accordance with the requirements of our profession, to withhold even from one patient the means of saving life because those means were not suited to all cases. And this we should all hold: That it is our duty to cultivate catholicity in our practice, to familiarize ourselves with every proper means of cure, and to add it to the *armamenta* of our resources, even should we find it available only in rare and exceptional cases. Aside from the therapeutic value of this method, its thorough employment is troublesome and, in cases of ladies, repulsive. A greater objection is that patients easily become discouraged, and rarely have the courage and perseverance to pursue the treatment with care enough and for a sufficient length of time.

Another important objection to its use, at least as generally employed here, has been the uncertainty of graduating the quantity of sulphureted hydrogen thrown into the rectum. Here, at least for a time, almost every variety of natural sulphureted-hydrogen water was brought into requisition, some varieties containing so little of this gas as to be comparatively inert, and, indeed, so much would the natural and artificially made preparations vary that the quantity of the gas administered could often not be known at all. This looseness could not but make the therapeutics uncertain, and, as a rule, the results attained were not logically proved.

The formula which I have invariably used, after a few unsatisfactory trials with others and with various sulphur waters, with perfect satisfaction is the one employed by Dr. Dujardin-Beaumetz in the Hospital Cochin. It is as follows:

℞ Sulphide of sodium, pure, 10 grammes, or 10 parts by weight;
Distilled water, enough to make 100 cubic centimetres, or 100 parts by weight.

One cubic centimetre of this liquid liberates exactly ten cubic centimetres of sulphide of hydrogen when there is added to it one cubic centimetre of the following solution:

℞ Tartaric acid, 25 grammes, or 25 parts by weight;
Salicylic acid, 1 gramme, or 1 part by weight;
Distilled water to make 100 cubic centimetres, or 100 parts by weight.

Thus a drachm, equal to about 4 grammes, of each of these liquids gives 40 cubic centimetres of the gas. At the Hospital Cochin about 150 cubic centimetres of the gas were used at a *séance*.

I have employed this method in four cases; in three of these it was quite useless; in one case, in which there was sensitiveness of the intestinal canal, its use was always followed by severe pain and diarrhœa. I will not dwell upon the features of the other cases, but proceed to the fourth, in which I observed the most gratifying results:

The patient was a lady, single, aged thirty-seven. Family consumptive. She came under my care in May, 1886. Left lung anteriorly dull on percussion, with diffused râles; strong bronchophony, limited expansion, with some pleuritic adhesion. Right lung dull posteriorly, with bronchial respiration; menses scanty, and occurring only once in two months. Emaciation, night-sweats, and diarrhœa. Severe cough, with purulent expectoration. A summer spent partly in the mountains of Virginia and partly in the Adirondacks produced but little improvement. Two months, February and March, 1887, spent in the South, were of more benefit: cough, weight, and general strength somewhat improved; expectoration less, but the same pathological conditions existed.

June 7, 1887, I commenced the use of Bergeon's method. It was well borne, and was used twice daily for a month. About two quarts of the carbonic-acid gas and eighty cubic centimetres of the sulphureted hydrogen, according to the formula, were used each time. When I went abroad, July 6th, the patient had already derived great benefit from the treatment; she continued it daily until my return, toward the 1st of October, and gained in that time nearly eighteen pounds. It has not been used since my return. Cough and expectoration now very slight; no perspirations; no moist sounds; but little expectoration; appetite and digestion good. I think that, with advantages of climate, complete recovery may be hoped for. Undoubtedly the summer she passed at the Thousand Islands, and the air (the elevation being about 1,200 feet), conduced greatly to her improvement.

There were in this case two features peculiar and necessary to success: First, Bergeon's treatment seemed from the first to be beneficial and to agree with the patient, and, second, the patient was most conscientious and persevering in following out by herself (she did not consult a physician during my absence) a troublesome and laborious course of treatment. As to whether the favorable air and climate for three months did not accomplish the benefit independently of the treatment, I would say that the first real improvement commenced with the employment of the latter, and continued *pari passu* with it. At the same time I am not an enthusiast as regards this system.

It has been suggested that sulphur-water taken by the stomach would effect the same benefit. The objections to this are that, to introduce into the system this way as much hydrogen sulphide as can easily be administered by the rectum, a quantity of sulphur-water great enough to derange the digestion would have to be swallowed. I think, too, there is no doubt that the gas thrown directly into the intestines is with much more readiness and certainty admitted into the blood and lungs.

UNCOMMON AURAL CASES.

By FRANK DUDLEY BEANE, A. M., M. D.

The interest of the following cases centers upon their comparative rarity. Many authorities, notably v. Tröltsch, Politzer, and Roosa, cite cases of long-retained foreign bodies within the external auditory meatus, but in nearly every instance marked pathological effects had resulted from their presence.

Cases of mycomyringitis aspergillina were first observed and have been recorded in relatively large numbers by European writers; nevertheless, observers in this country have contributed a liberal bibliography.

Case I. *A Large Bean within the External Auditory Canal for Ten Years without Signs of its Presence; Removal.*—E. S., aged twenty years, a native of the United States, clerk, consulted me on October 24, 1886, giving the following history: Four days previous he had felt a little itching in his left ear-canal, used the head of a good-sized pin to afford relief, and, during the manipulation, felt as though he had "touched the drum of the ear." Soreness, then pain, ensued. Attributing the result to mechanical violence from the use of the pin, and expecting its speedy disappearance, not till the evening of the third day did he consult his family physician, who announced the presence of a foreign body within the ear, and, after more than an hour's very painful use of probes, hooks, forceps, etc., failed to dislodge it. Thereupon the physician declared that partial detachment of the auricle was the only remaining resource. The next morning the patient called, suffering a moderate amount of pain in the ear. I found the left canal at its outer part slightly red and swollen, and its inner two thirds filled with a black mass much resembling very hard cerumen. Touching the body with a probe caused pain. Three minutes' careful syringing removed a black bean, ten millimetres long, eight millimetres wide, and six millimetres at its thickest part, slightly softened on its surface, and covered with a little cerumen at its proximal end. At sight of this body the patient recalled the fact that a little more than ten years before, while in Sunday-school, he was playing with such a bean, and had ended his pranks by forcing it into his ear. By forcibly shaking his head, while turned sideways and downward, he supposed he had removed the offending substance. Reporting his experience to his parents, they credited his statement of successful removal. For *over ten* years no sign of his undesirable guest had declared itself. Careful syringing with warm borated water and inflation completed the treatment. Three days later an examination demonstrated the absence of abnormity.

The salient comments upon this case refer to the carelessness of the parents, the large size of the ear-canal, the favorable site so long occupied by the body, and the emphasis which should be laid upon the *harmlessness and superior value of syringing* as against the *dangers* and (often) *futility* of employing forceps, probes, hooks, and the like for the removal of most of the foreign bodies from the external auditory meatus. Despite the almost unanimous advocacy of the syringe by writers of text-books, too much or too often repeated stress upon this point can not be made.

Case II. *Myringomycosis Aspergillina Flavescens; Otitis Media Catarrhalis Chronica.*—E. A. E., aged twenty years, a native of the United States, clerk, came to me on November 5, 1883, complaining of "buzzing" in his left ear, accompanied by a slight yellowish (watery) discharge and deafness, which had lasted about three weeks. There had been and was no pain. Having been annoyed by naso-pharyngeal catarrh for a long time, he had used, about four weeks before, a proprietary catarrh snuff a few times with the result of considerably aggravating the original trouble. After a few days the tinnitus and deafness declared themselves in a mild way, and had since slowly increased in severity. The discharge had existed about a week.

Examination.—*A. D.* = normal (acoumeter, voice, and fork). *A. S.* = acoumeter, $\frac{1}{15}$ m.; voice, $\frac{3}{15}$ m.; fork, louder; all uninfluenced by inflation. *Meatus, D.* = normal. *S.* = inner half thickly coated with a slightly yellowish-white substance, resembling wet paper or leather. Nearly the whole mucosa decidedly red and moist after the removal of the false covering. *Membrana tympani, D.* = normal. *S.* = a deep-red disc, without distinct blood-vessels, greatly swollen and infiltrated; no circumscribed bulging or blistering. *Eustachian tube, D.* = inflatable. *S.* = obstructed. *Naso-pharynx* = chronic congestive, dry catarrh.

Microscopic examination of the substance removed showed it to be composed of the mycelium, hyphæ, sporangeia, and conidia (light yellow) of *Aspergillus flavescens*. The forceps as well as the syringe was required for the removal of this very tenacious substance, which took three sittings to accomplish. Five weeks' after-treatment was necessary before the membrana tympani had resumed a normal appearance and movement, and the *p. a.* = $\frac{15}{15}$ m. (normal) acoumeter and voice.

Case III. *Aspergillus Nigricans in a Case of Otitis Media Catarrhalis Chronica.*—N. H. N., aged forty-one years, a native of the United States, merchant, first consulted me in January, 1886. Years ago he had suffered with chronic suppurative otitis, left, the result of a severe "cold in the head," which had healed only after prolonged treatment at the hands of a prominent aurist of this city. For a year past he had noticed a little deafness in the same (left) ear; during the last few months tinnitus (now a buzzing, then a ringing) had been added; both symptoms aggravated by a cold.

Examination.—*A. D.* = normal (acoumeter, voice, fork). *A. S.* = acoumeter, $\frac{4}{15}$ m.; after inflation, $\frac{6}{15}$ m.; voice, $\frac{7}{15}$ m.; fork, louder. *Meatus, D.* = thin, transparent, very small "cone," slightly retracted. *S.* = thickened, dull, greatly retracted, and adherent to promontory; old cicatrix behind the handle of the malleus. *Eustachian tube* = inflatable. *Naso-pharynx* = smokers' congestive catarrh.

Treatment at irregular visits during a period of eight weeks resulted in *p. a., A. S.* (acoumeter) = $\frac{7 \cdot 5}{15}$ m., and almost complete relief of the tinnitus. On the 12th of last May the patient called again, having been suffering for several days with subacute rhino-pharyngitis and pain in the left ear. Examination revealed the existence of a mild external otitis and subacute myringitis, the former being confined to the inner third of the canal. Salted hot-water douches, gentle inflation, and a borax gargle had relieved the condition in two days, when the patient went traveling. Four days later the pain returned, when he applied several drops of laudanum on cotton to the canal, but the next day the pain was worse, and so remained until his return to the city two days afterward. I then found the inner two thirds of the canal packed with a felt-like substance of loose texture, with here and there small, irregular black dots. The membrana tympani could not be seen, of course. Microscopic examination of the mass removed revealed a beautiful specimen of *Aspergillus nigricans*, with its sporangeia and conidia ranging from a moderately light yellowish-brown to a dirty black. Simple syringing was insufficient, so that four sittings under the combined use of the forceps and syringe, in the interval a (1 to 2,000) sublimate solution, were required for its complete removal. The parts beneath the mold were red, swollen, and tender, and an additional six days' treatment was continued before the parts were restored to their original condition.

The exciting cause in the second case I could never determine, as the patient was in health, in good circumstances, had applied no medicament, and had not been especially exposed to dampness. The same conditions obtained in Case III, except as related to the application to the ear. The laudanum had been freshly purchased, but may have been somewhat old; still, considering its extensive innocuous use in cases of earache, we may well question its ætiological relation to this case.

Below is appended a fairly complete

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261 West Eleventh Street.

REPORT OF
A CASE OF LARYNGEAL STENOSIS
DUE TO COMPRESSION BY GOÎTRE.

OPERATION; RECOVERY.

By GEORGE H. BOSLEY, M. D.

The extreme rarity with which goître causes laryngeal stenosis, and the very few cases on record in which it has become dangerous to life, induce me to give the history of a case occurring in my practice in 1883. In looking up the literature of the subject, I find an article published by Demme in the "Würzb. med. Ztschr," ii u. iii, "Ueber Stenose der Trachea durch Compression"; also one by Mettenheimer, in the same journal, iii, iv, and v, under the title of "Tracheostenose durch eine compacte Geschwulst der Thyreoidea." In this country, in November or December, 1883, Dr. A. G. Gerster reported a case of laryngeal stenosis caused by "a fibro-sarcoma of the entire thyreoid gland." Several others also of carcinoma have occurred, but, so far as I know, the case now reported is the first of its kind in this country, at least in which the laryngeal stenosis caused by the compression of an hypertrophied thyreoid gland necessitated operative interference for the preservation of life.

E. S., a girl, aged sixteen years, consulted me at my office, April 4, 1883, for an enlargement at the base of her throat, which she had first noticed about two years previously. The following winter she was troubled with shortness of breath and some dyspnœa, especially in the night. She had but little trouble with the tumor during the summer until the past winter, when her breathing became worse, especially on going up stairs, or on slight exertion. She was very restless at night, with frequent suffocative attacks. At this time physical examination showed an enlargement of the thyreoid gland of moderate size. There was no stridulous breathing, but the voice was somewhat weak. On April 17th I was sent for, as "Emma had a bad cold." I found her in bed, with a hoarse, croupy cough and considerable dyspnœa; her voice was very faint. They said she had taken cold, and had been much worse for the preceding three days. Thinking it a catarrhal attack, I prescribed accordingly. Not feeling at all anxious about the case, I did not visit her until the following afternoon, April 18th, when, on entering the room, I found her suffering from extreme dyspnœa, breathing with the greatest difficulty. On attempting to walk to the window, that I might have a better light, she was taken with a suffocative attack, crying out in a whisper that she could no breathe. Thinking it possibly an œdema glottidis, I ran my index finger down her throat and passed it into the larynx; she had no œdema. The patient becoming rapidly asphyxiated and apparently dying, I picked her up and, laying her on a sofa, took out my scalpel and speedily made an incision down on to the trachea, at the upper border of the tumor, but cutting through fully an inch of the enlarged gland, from which the blood poured in torrents. Turning her on her face, with her head off the sofa, so that the blood could not so readily enter the trachea, with my finger in the wound as a guide I made an opening. No air entering, I reversed the scalpel and, with the handle in the tracheal opening, turned it crosswise, with the same result. It then flashed across me that there was probably collapse of the tracheal walls lower down. Casting about for an instrument to pass down through the constriction, I bethought me of my Jacques catheter; so, cutting off the lower end, I passed it into the trachea and pushed it past the obstruction. During this time she had ceased to breathe, when, calling her father to my assistance, for I was wholly alone, I had him compress the bleeding vessels with his fingers while I turned her on her back and made artificial respiration until, in a short time, that function was partially re-established. Then I sent a messenger to the nearest druggist for the largest gum catheter procurable, and he brought me a No. 10 *English*. During this time she had only with the greatest difficulty obtained air enough through the No. 9 Jacques to live, with constant help by artificial respiration; but after the introduction of the No. 10 she speedily recovered consciousness, and was able to again recognize her surroundings.

I then sent for counsel, but it was not until several hours had elapsed that Dr. H. B. Sands was able to see her. Under the continued compression all hæmorrhage had ceased, and she was breathing very comfortably through the tube. Dr. Sands kindly suggested a Koenig's silver tracheal tube, and in the mean time as large a gum catheter as I could find. Early the following morning I introduced a No. 13 English catheter, one-fourth-inch internal caliber (as I was unable to find a silver tube which would answer, the ordinary tracheotomy-tube not being of the slightest use), cutting it to a length of five inches and a half. She could now breathe with perfect ease and slept well—better than for a month past. When the tube was taken out for cleansing, the following morning, the trachea immediately collapsed, but respiration was again restored by the introduction of another tube. The first one was found to be badly compressed laterally, for a space of an inch and a half, three inches from the top and an inch from the bottom; there was also an antero-posterior constriction about an inch below the point where it entered the trachea. Two days later Messrs. Tiemann & Co. had the Koenig silver tube ready, and I introduced it; it corresponds to a No. 15 sound, English scale, in caliber, and is about five inches and three quarters long, with a flexible spiral tube joining the top and bottom of what would otherwise be a common tracheotomy-tube. There was a good deal of inflammatory swelling of the wound, becoming at one time almost erysipelatous. Steam was constantly kept up in the room, and the tube occasionally sprayed to facilitate the expulsion of thickened mucus. After the subsidence of the inflammation, at a consultation with Dr. Sands, it was decided to try a radical cure by the injection of tincture of iodine deep into the tissues of the gland. At the time of beginning the injections (May 21st) the circumference of the neck over the goître was seventeen inches; in one month it had been reduced an inch and three eighths, the mass becoming much firmer and denser, some spots being almost fibrous. The amount usually injected was fifteen minims into each lobe of the gland, the injections being made at intervals of four or five days. A curious result of the injections, although they were made *very* slowly, was a feeling of faintness with a strong taste of iodine in the mouth. At these times the patient speedily recovered by lying down and taking a little whisky. Early in the following December she had a severe attack of acute croupous tracheitis and bronchitis. One day, when she was suffering from much dyspnœa, I removed the tube, thinking it might have become obstructed; although she had worn the tube almost eight months, the trachea immediately collapsed, and she was only saved from suffocation by its prompt reintroduction; after this she was kept upon the use of lactophosphate of calcium to hasten the hardening of the cartilaginous tracheal rings, and, as she was very anæmic, she also took acetate of iron, with generous doses of quinine. Early in the spring of 1884 the tracheal rings were found to be in better condition, and on July 3, 1884, the long tube was removed; but, as a matter of precaution, a short one was left in until the 6th of August following, when that too was dispensed with. On August 13th the tracheal wound was completely closed, and the neck of normal size. Laryngoscopic examination showed the larynx and trachea perfect in every respect.

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LETTER FROM CINCINNATI.

Medical Legislation.—A State Sanitary Convention.—The "Journal of the American Medical Association."—The Obstetrical Society of Cincinnati.—The Coming Meeting of the American Medical Association.

CINCINNATI, *January 20, 1888.*

WITH the reassembling of the Legislature comes another effort at medical legislation. This has come to be a somewhat threadbare topic, but gentlemen who have at heart "the elevation of the profession and the protection of society," etc., manifest a pronounced persistency in the cause which they have espoused. The agitation has been going on for eleven years since the Illinois act went into effect and drove nearly eight hundred quacks and charlatans either out of that State altogether, or at least out of practice. In Ohio the movement was finally championed by the State Medical Association, which indorsed two bills—one for a State board of health and the other for a State examiners' board. The board-of-health bill passed, but the examiners' bill never became a law. This was two years ago. Another examiners' bill was presented last winter. It provided for the examination of all candidates for practice; none but college graduates in medicine were to be eligible to examination; and, by express provision, medical college men were to be rigorously excluded from the examining board. Some of the college men resented this provision and the bill was defeated. The matter came up again before the State society last June on the report of the committee on medical legislation. The failure of the bill to pass was charged home upon the college men. One teacher of some prominence from this city retorted by saying in effect that the failure of the bill to pass was to be charged rather to the inefficiency of the State Board of Health, which the committee had succeeded in establishing the year before. No personal reflections were intended so far as the individual members of that board were concerned, but, it was urged, the fact remained that it was a political body, and as such fell far short of the purposes for which it was created. It is but fair to say that the criticism was, to say the least, premature, as the board of health has since demonstrated a high degree of efficiency.

But the opposition of last winter is taking the aggressive this season, and will soon come to the front with a bill which, even though it may fail of passage, will yet show that the former opposition was not actuated by selfish motives. The title of the proposed bill is, "A bill to provide for the registration of all practitioners of medicine and surgery in the State of Ohio, and the organization of the College of Physicians and Surgeons of Ohio, and to define the duties of the medical colleges of the State."

Sections 1, 2, 3, and 4 provide for the registration of physicians now in practice. The language employed is practically that of the Pennsylvania law, which has been found to act so well.

Section 5 provides that any person who may hereafter desire to commence the practice of medicine in the State of Ohio "shall lay his diploma before the faculty of the College of Physicians and Surgeons of Ohio"—a purely examining body created by the act—upon whose indorsement the diploma may be registered. The further provisions are as follows:

SECTION 6. The practitioners, registered as provided for in Sections 1, 2, 3, 4, and 5, shall constitute the College of Physicians and Surgeons of the State of Ohio, invested with ordinary corporate powers, and shall meet annually in general session to consider such questions as may pertain to the interests of the profession and the welfare of society. The business of the college shall be managed by the board of trustees as hereinafter provided.

SEC. 7. The registered practitioners shall meet in their respective counties at the court-house, or the usual place for the meeting of the county medical society, on the second Saturday after the expiration of the time for completing the registration, and organize by electing a president and such other officers as they may deem necessary, who shall hold their offices until their successors are duly elected and qualified; and the presidents of the county organizations shall constitute and be known as the trustees of the College of Physicians and Surgeons of Ohio. Each county organization may, in the name of the College of Physicians and Surgeons of Ohio, sue and be sued, plead and be impleaded; but such organization shall not involve any other organization in litigation or subject the same to financial loss, and each and every county organization shall discipline its members for gross unprofessional conduct and expel those who may be convicted of using the knowledge or skill of the medical profession in the commission of crime, and direct the county clerk to remove their names from the county medical register; but the accused shall have the right to appeal first to the trustees of the college and afterward to the courts for redress. And the county organizations shall do and perform such other duties as may be required of them by this act, or the rules and regulations of the trustees as provided for in Section 8 of this act.

SEC. 8. The trustees of the College of Physicians and Surgeons of Ohio shall, thirty days after their election, meet in the capitol of the State and organize by electing a president, secretary, treasurer, and such other officers as they may deem necessary, who shall hold their offices for one year and until their successors are elected, and the president shall be the executive officer of the college. In their corporate capacity they may establish additional county organizations in counties having more than one hundred and fifty registered practitioners, and in such capacity they shall receive and act upon all resolutions, appeals, and other communications from county organizations; make rules and regulations for the government of the college, which shall be in force and binding on all registered practitioners on and after their adoption by a majority of the county organizations; appoint a faculty of which the president, secretary, and treasurer of the college shall be members and officers; provide and use a seal, and annually publish the proceedings of the college, including a correct list of the registered practitioners of the State as reported to the county organizations by the county clerk, of which each registered practitioner shall be entitled to a copy sent to his address.

SEC. 9. The faculty of the College of Physicians and Surgeons of Ohio shall annually meet on the call of the president of the college, at such time and place as he may name, to inspect the diplomas and pass upon the qualification of all persons who may appear before them, as directed in Section 5 of this act. The president of the college, when the faculty is not in session, or the president of each of the county organizations, may direct the county clerk to register persons whose diplomas have not been inspected by the faculty, but such registration shall be void after the next annual meeting thereafter, unless approved by the faculty. The faculty of the college shall serve without compensation, but the trustees shall provide for their reasonable expenses during their annual meeting, to be paid out of admission fees, and the president of the college shall receive such reasonable compensation as the trustees may direct for his services as executive officer of the college, to be paid out of funds arising from admission fees. And the trustees of the college shall serve without compensation, but their respective county organizations may provide for their reasonable expenses during the annual session.

The State Board of Health, efficiently officered by Dr. John D. Jones, president, and Dr. C. O. Probst, secretary, has inaugurated a series of sanitary conventions similar to those which have proved so popular for a number of years in Michigan. The next one is to be held in Akron, January 25th and 26th. A series of very interesting papers is announced. Among the essayists are Dr. George G. Baker, of Akron; Dr. J. W. Shrady, of Kent; Dr. R. Harvey Reed, of Mansfield; T. C. Reynolds, Esq., of Akron; Professor M. C. Reed, of Hudson; Professor A. E. Jones, of Massillon; Professor E. Fannfelter, of Akron; Dr. Josiah Harzell, of Canton; Dr. W. C. Jacobs, of Akron; the Rev. Thomas Nahar, of Akron; Dr. E. O. Portman, of Canton; General A. C. Voris, of Akron; Professor W. J. Scott, of Cleveland; Dr. S. P. Wise, of Millersburg; Dr. B. B. Longhead, of Ravenna; and Dr. G. C. Ashman, of Cleveland. The occasion promises to be one of interest and value, particularly to the people of Akron and the Western Reserve, and local sanitary interests figure largely among the topics announced. The tendency to drop the abstract and deal with the concrete is a healthy one in all scientific organizations.

The "Journal of the American Medical Association" has established a local business agency in Cincinnati. It has been fortunate in securing the services of Dr. J. C. Oliver as correspondent, as he not only is a talented young physician and a facile writer, but commands the *entrée* to all the professional circles of the city.

The Obstetrical Society of Cincinnati held its annual meeting last week and elected Dr. Giles S. Mitchell, president; Dr. James G. Hyndman, vice-president; Dr. W. H. Wenning, secretary; Dr. George E. Jones, treasurer; and Dr. T. P. White, corresponding secretary. Dr. Apostoli, of Paris, was elected a corresponding member.

The Committee of Arrangements, under the efficient presidency of Dr. W. W. Dawson, is already well at work preparing for the meeting of the American Medical Association in this city in May next. Dr. William Judkins, of the Committee on Hotels and Transportation, informs me that the ample hostelries of Cincinnati are manifesting a lively disposition to do the hospitable thing, while the railroads offer the usual concessions. Apropos of the railroads I have a pleasing bit of news for the New Yorkers. Mr. Rinearson, of the Erie, informs me that his line purposes making special efforts not only for the comfort but for the pleasure of delegates from New York. These efforts will probably materialize in the form of the elegant new hotel cars of the line, which will be placed at the exclusive disposal of the medical party.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 28, 1888.

RETROVERSION OF THE UTERUS AND TUMORS.

In a recent issue of the "Centralblatt für Gynäkologie," Dr. Ziegenspeck, of Munich, discusses this subject at some length, excluding from consideration those tumors of the uterus or ovaries which develop toward the abdominal cavity. Such tumors, he says, usually displace the uterus to the side opposite to that in which they are situated; exceptions to this rule occur, but they are neither of diagnostic nor of prognostic import. He has reference to submucous growths, or, to speak more definitely, polypi, which, growing toward the vagina, bring about certain displacements of the uterus; but he discards a class of cases described by Schultze in which the tumor, after passing out of the uterus, grows rapidly and presses against the vaginal wall. In so doing it naturally elevates the uterus, which at the same time must undergo a displacement depending upon the site of the insertion of the pedicle of the tumor; if this is on the anterior wall, the uterus is retroverted, while, if it is on the posterior wall, it is anteverted.

The class of cases to which the author draws attention, which are far commoner than those just mentioned, are those in which the polypus reaches the vagina, but does not grow so rapidly as to elevate the uterus, and yet produces retroversion of that organ, no matter whether the pedicle is inserted on its anterior or its posterior wall. In such cases the tumors are of a diameter of from two to three inches, spherical, and surrounded by the margin of the os externum. The pedicle is drawn tense, and consequently the uterus is straightened and retroverted; it moves with the tumor as a whole, the fundus being carried in the opposite direction to that which the tumor is made to take. But the pedicle must have its insertion beyond the internal os, or the uterus will not be fully put on the stretch and will not undergo the necessary straightening. It is immaterial, however, as already stated, whether the pedicle is inserted into the anterior or the posterior wall. These cases, the author says, are of practical importance from the fact that the displacement does not disappear on the removal of the tumor, as in the other forms, except in the very early stages, and then only with the aid of subsequent treatment. Out of a great number of cases of this kind which he has observed, he can recall only one in which replacement of the uterus took place spontaneously after the removal of the polypus.

Several cases are cited which appear to bear out his statements, and they are further sustained by experiment. A small hook was inserted, first into the anterior and then into the posterior wall of the uterus of a woman on the tenth day after delivery. To the hook was attached a silk thread, and, when this was drawn upon in the direction of the vaginal canal, the anteflexed uterus first became straightened and then, as the traction on the thread was continued, retroverted. The same train of events occurred whether the hook was inserted into the anterior or the posterior wall. This procedure was repeated on five different lying-in women, and in all of them with the same results.

As a practical outcome of his observations, the author holds that it is a matter of duty to remove such polypi as soon as possible. If the stage has passed in which spontaneous replacement takes place, the displacement should be treated with a suitable pessary, and cold-water irrigations of the vagina and rectum should be used, so as to give tone to the relaxed ligaments.

MINOR PARAGRAPHS.

SAYRE'S "ORTHOPÆDIC SURGERY" IN GERMAN.

In a recent number of the "Internationale klinische Rundschau," a new and excellent Vienna weekly journal, we find a very appreciative notice of Dr. F. Dumont's German translation of Dr. Lewis A. Sayre's "Orthopædic Surgery and Diseases of the Joints." The work is spoken of as "das vortreffliche Buch des berühmten amerikanischen Orthopädisten," and, for comprehensiveness and excellence, is set down as equaled by only a few others on the same subject.

THE COMBINED USE OF CELLOIDIN AND PARAFFIN IN MICROSCOPY.

In the "Zeitschrift für wissenschaftlichen Mikroskopie," Kultschizky states that the use of both celloidin and paraffin in imbedding microscopical preparations has certain advantages over that of either material alone; the individual parts of delicate objects preserve their proper relations; the preparation remains dry, and the process of making sections does not require the employment of alcohol; and sections can be made as thin as when paraffin only is used. According to an abstract contained in the "Fortschritte der Medicin," the method is as follows: The alcoholic preparation is allowed to lie for a few hours in a mixture of equal volumes of alcohol and ether; it is then placed for twenty-four hours in a solution of celloidin, the strength of which is immaterial; it is now placed in ordinary oil of origanum, subsequently in a mixture of paraffin and oil of origanum, which should not be over 104° F. in temperature, and finally in melted paraffin. The length of time that it should remain in the oil of origanum, in the solution of paraffin, and in the melted paraffin depends on the character of the object, and must be ascertained by trial.

THE REMOTE EFFECTS OF CHLOROFORM.

The danger of anæsthetization with ether in the case of persons affected with even moderate disease of the kidneys has recently met with general recognition—to such an extent indeed that the relative innocuousness of that agent compared with chloroform, so far as its immediate effects are concerned, has been somewhat offset. It is important to note, therefore, certain observations tending in the opposite direction by showing that chloroform too has its after-effects. The "British Medical Journal" gives an abstract of an article by Dr. Ungar, published in the "Vierteljahrschrift für gerichtliche Medicin," who has found that the prolonged administration of chloroform to healthy animals caused death in some of them after the lapse of more than a day from the termination of the anæsthesia. Examination showed fatty changes in the heart, the liver, the kidney, the respiratory and digestive apparatuses, and various voluntary and involuntary muscles—conditions, in short, which, as the author remarks, must often be present in greater or less degree in patients to whom chloroform is given, and probably be more or less aggravated by its administration.

TRANSLUCENCY IN SOLID TUMORS.

At a recent meeting of the French *Académie de médecine*, as we learn from the "Gazette hebdomadaire de médecine et de chirurgie," Dr. Poncet, of Lyons, alluded to the general confidence placed in the translucency test as showing the contents of tumors to be more or less watery. The accuracy of the test, he said, was not always to be depended upon, for there were some solid tumors, especially of the fingers and the wrist, that allowed of the passage of rays of light, perhaps owing to the thinness of the integument aided by the vascularity.

THE SARATOGA SPRINGS.

The apprehension having been entertained for some time past that the supply of the Saratoga waters was likely to be seriously diminished, or their effervescent quality impaired, as the result of the operations of certain persons who have been boring for gas in the vicinity, the "Albany Journal" has investigated the matter, taking the trouble to get the State geologist's opinion. What it lays before its readers is practically to the effect that there is no danger of any noteworthy diminution of the supply of the mineral waters, or of the amount of gas contained in them, for many generations to come.

ITEMS, ETC.

The Medical Society of the State of New York.—All physicians wishing to attend the meeting are informed that the New York Central Railroad Company has consented to issue excursion tickets at the rate of a fare and a half ($4.65), the regular rate being $6.20. It is the intention of the majority of the delegates from New York and its vicinity to go to Albany on the 6th of February by the 3.30 p. m. train. If a sufficient number take that train, a drawing-room car will be furnished for their exclusive use (additional fare for that car, $1). Gentlemen who can arrange to go on that day and by that train are asked to notify Dr. Clarence C. Rice, secretary of the New York delegation, No. 115 East Eighteenth Street, on or before February 6th. Certificates for tickets can also be had by applying to him.

The late Dr. Wesley M. Carpenter.—At the last meeting of the Medical Society of the County of New York the following preamble and resolutions were passed:

"*Whereas*, in the wisdom of the Supreme Ruler, our distinguished associate, Dr. Wesley M. Carpenter, has been taken from our ranks at the very meridian of his usefulness,

"*Resolved*, That we, as members of the Medical Society of the County of New York, desire to hereby record our appreciation of his long and faithful services as our secretary.

"*Resolved*, That in all things pertaining to his professional work we recognize in Dr. Carpenter's career among us a standard of life and a devotion to scientific medicine which place him among the most honored of our profession.

"*Resolved*, That, while admiring as we do those qualities most conspicuous in his character as a medical man, a much more intimate relation had been established between him and us which renders his death a personal bereavement. Although time may mitigate our grief, it can never banish from our hearts the recollection of his kind and exemplary life.

"*Resolved*, That these resolutions be spread upon a page of our minutes set apart for that purpose."

Elsewhere in this issue the reader will find the remarks made by Dr. Daniel Lewis, who moved the passage of the resolutions.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service, for the two weeks ending January 21, 1888:*

Purviance, George, Surgeon. To proceed to Detroit, Mich., as inspector of unserviceable property. January 11, 1888.

Austin, H. W., Surgeon. When relieved to proceed to Chicago, Ill., and assume charge of the Service. January 12, 1888.

Gassaway, J. M., Surgeon. Leave of absence extended fifteen days. January 10, 1888.

Goldsborough, C. B., Surgeon. When relieved to proceed to New Orleans, La., and assume charge of the service. January 12, 1888.

Irwin, Fairfax, Surgeon. To proceed to Boston, Mass., and assume charge of the Service. January 12, 1888.

Carter, H. R., Passed Assistant Surgeon. When relieved to proceed to Ship Island Quarantine, Miss., and assume temporary charge of the Service. January 12, 1888.

Carrington, P. M., Assistant Surgeon. Granted leave of absence for thirty days. January 10, 1888.

Goldsborough, C. B., Surgeon. To proceed with insane seamen from Chicago to Government Hospital for the Insane. January 16, 1888.

Heath, F. C., Assistant Surgeon. To proceed to Buffalo, N. Y., for temporary duty. January 21, 1888.

* Stoner, G. W., Surgeon. To proceed to Wilmington, N. C., Georgetown and Charleston, S. C., Savannah and Brunswick, Ga., Fernandina, Jacksonville, and Pensacola, Fla., as inspector. December 30, 1887.

Society Meetings for the Coming Week:

Tuesday, *January 31st;* Medical Society of the County of Onondaga (semi-annual—Syracuse), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *February 1st:* Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *February 2d:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *February 3d:* Practitioners' Society of New York (private).

Saturday, *February 4th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

OBITUARY NOTES.

Arthur Farre, M. D., F. R. C. P., F. R. S., of London, died, as we learn from the "Lancet," on the 17th of December, at the age of seventy-seven. Dr. Farre was not only an obstetrician of note, but a frequent contributor to the advance of obstetric medicine. Probably he was most widely know by his article on "The Uterus and its Appendages," in Todd and Bowman's "Cyclopædia of Anatomy and Physiology."

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* Omitted from previous lists.

Letters to the Editor.

PREMATURE RUPTURE OF THE AMNION.

Cornwall, N. Y., *January 10, 1888.*

To the Editor of the New York Medical Journal:

Sir: Being unable to find any but the most meager information in the literature pertaining to the subject of premature rupture of the amnion, I desire the benefit of your correspondents' department in deriving information as to the proper treatment to be pursued in such a case as this:

Mrs. X., twenty-five years old, the mother of two children, is now pregnant and expecting to be confined on or about February 17th. Her last pregnancy occurred four years since. She says that on the evening of January 1st her waters broke while she was walking about her room, during a coughing fit, and that water continued to escape in small quantity during the night. I first saw her on January 5th, ordered her to lie abed, and prescribed a one-grain pill of opium every four hours, as she had fugitive lancinating pains in and over the region of the uterus. She complained of headache also, for which I prescribed antipyrine in ten-grain doses. The next day her condition was much better, and, with strict injunctions for her to lie abed for a while and to advise me of any change, I ceased my calls.

Sunday afternoon I was sent for in haste, and on my arrival I learned that while she was out of bed and in a coughing fit the water had again escaped with a gush. When I saw her she was in bed, and the water had nearly ceased flowing.

I have questioned her closely concerning her micturition, thinking it might be incontinence, but she assures me that it is not the escape of urine. I think the possibility of its being hydrorrhœa is remote. As to her previous history, in her first pregnancy the sac broke nearly five weeks before labor, which was "dry" and very severe.

She estimates the amount of water lost at about a pint and a half, and the abdomen is much lessened in size.

A. L. Browne.

PRIVATE VENTURES IN COLLECTIVE INVESTIGATION.

Fort Worth, Tex., *January 12, 1888.*

To the Editor of the New York Medical Journal:

Sir: I did not intend to send you a protest against your article on "Private Ventures in Collective Investigation," wrong as I believe you to be; but, when "Country Practitioner" and "Veritas" prove that they are so "bankrupt in reserve capital of nerve force" as not to know this is a free country and they need not answer a genteel question if they do not know how, I think it time to defend the truly honest hard workers in our profession who are earnestly seeking aid.

A. P. Brown.

Proceedings of Societies.

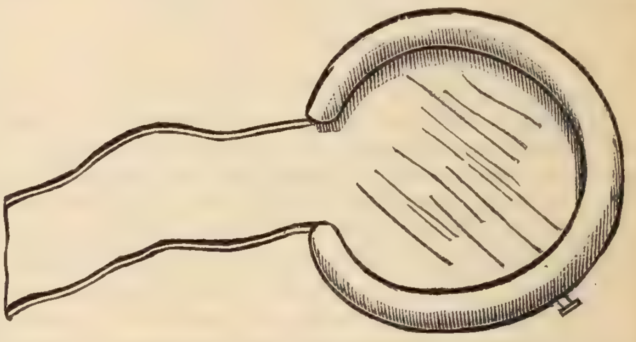
PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of January 11, 1888.

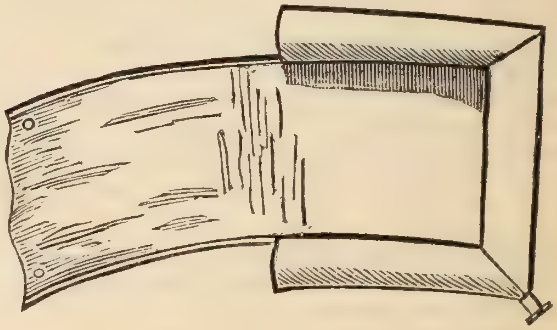
The President, Dr. J. Solis-Cohen, in the Chair.

Rubber Cushions for Surgical Purposes.—Dr. Howard A. Kelly read the following paper: It is now almost a year since I put into the hands of Mr. Levick, manufacturer of rubber goods, several designs of cushions for surgical purposes. These cushions resemble those commonly used by students at lectures, in having an inflatable rim, but differ in being left open on one side, being C-shaped or rectangular, with one side out. They have a bottom of rubber sheeting extended into an apron some inches in length for the purpose of drainage. I have had constructed three separate forms, a large C-shaped cushion measuring about twenty inches in diameter, the opening of the C being about eight inches across, and the apron twenty inches in length. The rim measures about two inches in diameter when inflated. This pad I constantly use for abdominal sections; it is also of great service in obstetrical cases requiring operative manipulation. It permits the free use of water for douching purposes; drains all blood and water from the field, enabling the operator to return the patient at once to bed without the necessity of removing clothing or changing linen. It has each month saved me more than its cost in the wash at my private hospital.

A similar pad of the same pattern, measuring but ten inches in diameter, is in use on the examining-table in my office, in all cases in which it is necessary to douche out the uterus or vagina.



The third pattern, which is in constant use for minor gynæcological work, is the perineal cushion. It is rectangular in shape, opening on one side, having a rubber bottom and long apron similar to the preceding. When it is in use the patient's clothes are elevated, and the thighs held flexed on the abdomen by my "Beinhalter." The buttocks are drawn down over the edge of the inflated rim, and the apron which hangs down from the edge of the table carries off all blood and the water used throughout the operation.



There is no one device in all my gynæcological work which has given me so much comfort as these simple cushions. I use gallons of water with the utmost freedom, and without ever being obliged to think once where it is going. In perineal work, instead of using sponges, I use constant irrigation, which prevents clotting of blood and soiling of instruments, and replaces at no expense, and with greater comfort and satisfaction, the sponges formerly used. The work thus accomplished is neater and cleaner, and the results are better.

I also present now for the first time a design for a rubber bed-pan. It is oblong in shape, with an inflatable rim and a rubber bottom. It differs, however, from any previous device in the fact that one end communicates with a large funnel-shaped reservoir, terminating in a large nozzle through which the fluids are finally discharged. The whole peculiarity of the device depends upon the funnel and its outlet. The funnel is very broad at the top, being of the full width of the cushion, about seven inches in depth to the tube, terminating in the discharge pipe of the same length, which is perforated at its lower side by a button-hole for attachment, when in use, to the rim of the cushion. When the cushion is in use the rim is inflated, the discharge pipe is buttoned to the rim, and the patient is placed upon the cushion. Vaginal or rectal injections are now to be given. The fluid, as it is discharged from the vagina or rectum, accumulates on the floor of the cushion, the amount this will hold depending entirely upon the depth of the inflated rim and the size of the cushion and reservoir. When it is desired to empty it, the rim is caught in the hand at the upper end, and carried with the funnel hanging downward; all fluids at once gravitate into this, but do not escape, owing to the attachment of the discharge pipe to the rim. It is then carried to the closet and the discharge pipe unbuttoned, when the fluid rushes out; it is further cleaned by allowing the water to run freely through it in the same manner.

The advantages gained by this device are very great. The softness of the rubber is a great advantage over the hard bed-pan, and the capacity of the cushion is much greater, and may be made to vary with the size of the reservoir alone. It can thus be used for purposes for which the bed-pan is entirely inapplicable. The facilities for cleansing are perfect, eliminating the chief objection to which rubber cushions hitherto in use are open. The ease of transportation is also an available feature, as when collapsed it can be rolled up and packed away in a small space. It can also be used for continuous irrigation, by leaving the discharge pipe, which can be made of any length, hanging over the side of the bed, discharging on a piece of rubber sheeting which conducts the fluid into a bucket.

Dr. J. **Price** said: The only matter about which any question exists, the only thing in controversy, is whether Dr. H. A. Kelly has any claim whatever as the inventor or originator of the irrigation pad. Such claim he has set up not only here but elsewhere, without, I maintain, a shadow of authority in fact. Introducing the instrument here, he has made it legitimate matter for discussion, not only as to the merits of the instrument, but as to the genuineness of its authorship. About five years ago I conceived the importance of an irrigation pad or cushion, and from a design of my own my friend, Dr. John Madison Taylor, made a drawing. The instrument, as drawn, was ordered through Kolbe. Dr. H. A. Kelly saw it not only at the instrument-store, but also at my office. He there examined it, and we discussed its merits. I here present a bill from the New York Rubber Company for making this operating cushion, dated January 7, 1885.

Dr. **Kelly** said: I am sorry that anything so unpleasant should have come before the society, and I should not have brought the matter up had not the remarks in reference to it been made so publicly after the last meeting that I have been forced to defend myself. I can only repeat that I have no recollection that Dr. Price ever spoke to me on this subject.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of January 3, 1888.

The President, Dr. C. L. Dana, in the Chair.

Cerebral Tumor.—Dr. J. C. **Shaw** reported the following history: The patient was a man, forty-one years of age, a jeweler by trade, temperate, and of good previous history. There was no history of syphilis. In 1879 he had in the night an attack of rigidity which was followed by a deep sleep. On March 19, 1882, he had an epileptic attack, the convulsion commencing in the left side of the face and extending to the neck, so that the head was twisted to the left side; the eyes were turned upward. Thus far the patient was conscious and had raised the left arm to strike upon his bench to attract help when his arm was seized with the spasm, and he knew nothing further. The attack was followed by sleep. He had as many as four such seizures in a week. In one attack observed by the speaker the left side of the face and the left arm had been principally affected. There was no loss of consciousness in this attack. The convulsions were preceded by a peculiar painful sensation in the roof of the mouth and in the teeth. There was more or less numbness of the left side, the tactile sensibility of which was diminished. Two points were recognized upon the left hand only when 4 ctm. distant, while upon the right hand two points were recognized when 1 ctm. distant.

In January, 1886, he began to complain of headache, also of nausea. Choked disc was now found. In August, 1886, vision was almost lost. Headache and nausea continued, and mental cloudiness was apparent. On February 4, 1887, the patient would fall to the right side, there was paresis of the left arm and leg, and he could not tell when he was lightly touched. He was now weak, thin, and confined to the bed. In March, 1887, the urine and fæces were passed involuntarily. In May a bedsore appeared. On June 21st the patient suddenly became comatose with puffing respiration, chiefly abdominal. After thirty-six hours he recovered from this, but on July 31st died of exhaustion, extremely emaciated. The skull was found very thin, the veins of the meninges prominent. On lifting the brain, the posterior fossa was found to contain fluid, the origin of which did not appear. The left hemisphere showed no gross lesion. In the right hemisphere the dura was adherent throughout a localized patch, dark-brown in color, and occupying the lower part of the motor zone, beneath which softening appeared. The basal ganglia were free.

The pain in the teeth complained of at the commencement of the spasms had suggested a reflex from the dura to the fifth nerve. The reader considered it not illogical to conclude that the numbness, too, was to be explained by the irradiation of this reflex to other portions of the sensory tract. The apoplectoid seizure was probably due to hæmorrhage into the softened mass. The opinion of the members was requested upon these points.

The **President** inquired in regard to the character of the growth.

Dr. **Shaw** replied that sections had not yet been made, but he considered the growth a glioma.

The **President** found that the growth occupied only the lower part of the ascending frontal and did not involve the parietal lobe.

Dr. E. C. **Seguin** remarked that, as the pia was *in situ*, exact location was difficult, but that, according to his judgment, the lower part of the precentral and the posterior extremity of the second frontal and of the third frontal convolutions were involved. The fact that Dr. Shaw had observed no laryngeal symptoms was interesting.

Dr. W. R. **Birdsall**, referring to the sensory symptoms, remarked that the tumor was not simply a cortical lesion; it extended inward, and more central tracts had probably been involved.

Dr. M. A. **Starr** added that sensory symptoms accompanied motor impairment where the parietal lobe was invaded. As a rule, where cortical motor lesions were without sensory disturbance, the location of such lesions was anterior to the fissure of Rolando. Where sensory disturbances were also found, it was posterior to that fissure. In this case, however, it was not impossible that congestion posterior to the fissure would explain the symptoms.

Dr. Seguin remarked that the subject of sensory disturbance in connection with cerebral tumors was most interesting and important. In his own experience a slight diminution of sensibility had accompanied lesions of the motor centers even when confined to the cortex. Nothnagel, at the Congress for Internal Medicine in Germany, had referred to slight tactile anæsthesia in a large number of cases of tumor or lesion of the motor cortical centers. These were, however, without loss of the muscular sense. It was conceded that the muscular sense was located in the parietal lobe. In a case of Dr. Weir's, with sarcoma involving the fasciculus for the face and hand, there was distinct anæsthesia of the face and hand, but no loss of the muscle sense as tested by passive motion and weights.

Dr. J. J. Putnam, of Boston, recalled a case of tumor which had sprung from the falx between the two hemispheres and perforated the skull. At the time of death the whole left side was contractured. In this case numbness of the left wrist had preceded the motor symptoms. This tumor had been posterior to the fissure of Rolando.

Dr. Fisher asked the opinion of the meeting in regard to hyperæsthesia and pain under these circumstances. He recalled a case in which, with the symptoms of a tumor restricted to one side, there had been great increase of sensitiveness and pain.

Combined Sclerosis.—Dr. Starr presented the history of a case. The patient had been under his care at the Polyclinic for nine or ten months. He was sixty-two years of age, of good family history, and free from syphilis. Eight or nine years ago he had commenced to complain of a dull aching pain in the sacrum and down the legs. He had had no lightning pains, but a progressive difficulty in locomotion until he was now markedly ataxic. There was increased tendon reflex at the knees. The case differed from ordinary locomotor ataxia in the absence of lightning pains and the absence of the loss of the tendon reflex. There had been slight enuresis, but the urine was now retained. The pupils were contracted, but were not of the Argyll-Robertson type. They reacted both to light and to accommodation, but sluggishly. The tremor of the muscles of the face referred to by Gowers was present. It was a light tremor like that of paretic dementia.

The President then introduced Dr. J. J. Putnam, of Boston, the president of the American Neurological Association.

Report of the Examination of the Spinal Cord in a Case of Combined Sclerosis.—Dr. Putnam presented the following report: The patient was a woman, fifty-eight years of age, whose father had died at eighty, and her mother at eighty-three years. The patient had been divorced from a first husband on account of his immoral conduct. Her second husband was also dissolute. When twenty-eight or twenty-nine years of age the patient's hair had fallen out. There had been no eruption noticed. She had used stimulants freely, but never in excess. Beginning in 1880, she had suffered with diarrhœa. Brown discoloration of the skin of the left arm and neck had then been noticed. Subsequently the skin of the abdomen became of a deep chocolate-color and the pigment of the nipples and axillæ increased and deepened. When she was first seen by the reader her face was as dark as that of an Indian and roughened with scales and exudation. In 1883 she was treated for anæmia and dyspepsia, the nerve affection not having appeared until two or three years ago. The first nerve symptom was numbness in the fingers. In November, 1886, she had lost power in the limbs, so that her gait was unsteady. She had difficulty also in the use of her hands, and was said to have fainted at one time with her teeth clinched. Her motor inability consisted in incoördination rather than paralysis. She had no lightning pains, but closing the eyes increased the incoördination, so that she failed to reach the spot aimed at with her hands within four inches. On account of her mental apathy, her sensory condition could not be made out. Her answers to questions were not correct. She had a ravenous appetite and the diarrhœa continued. Taste had been impaired for several years. During the following six months the legs became completely paralyzed, and the patient died April 8, 1887, six months from the onset of the ataxia and the paraplegia. The symptoms of ataxic dementia were prominent in the ravenous appetite and disordered taste, leaving the diagnosis perhaps open to question, as examination of the brain was not permitted. Spitzka had found degeneration of the lateral tracts in dementia, but coincident degeneration of the pyramidal tracts was not present in these cases.

The post-mortem examination showed in the lower ileum several ulcers apparently tubercular in origin. In the cord there was softening of all the tissues at the level of the fourth dorsal nerve. There was extreme whiteness with no trace of vascularity in this part. The cord was examined from the region of the first lumbar to that of the second cervical vertebra. The posterior columns through their whole extent showed a condition like that of a primary sclerosis. At the level of the twelfth dorsal vertebra there were two sclerotic areas, one external to the column of Goll in the column of Burdach. The lateral columns appeared as described by Spitzka in his two cases of primary dementia. The septa between the nerve spaces were broken down so that holes appeared in the sections with fragments of myelin and granular cells. These changes were confined to the lateral pyramidal columns up to the middle cervical region, where the direct cerebellar tract of both sides took on the same appearance, and the diseased lateral area became less.

It was noted that the softened spot might have been due to anæmia or to myelitis. It was against the latter theory that the vessels were here shrunken, and there was no transudation of white globules to be seen. The degenerations were not in direct relation with this softened tract. The posterior nerve-roots were healthy. The anterior nerve-roots were affected with different degrees of inflammation.

The reader referred to Strümpell's and Gowers's classifications, also the general question of primary systematic sclerosis of the spinal cord.

Dr. Starr considered that the specimens placed the diagnosis of combined sclerosis in this case beyond doubt, and, inasmuch as the case had presented symptoms not recognized as belonging to this condition, the paper was one of unusual service by enlarging our clinical picture of the disease. The exact pathological difference between the condition of vacuolization in the lateral columns and that of the ordinary sclerosis of degeneration was a matter of interest. In these specimens the lateral columns were vacuolized, and in the posterior columns the connective tissue was increased; yet both processes were called sclerotic, when they probably should be differently classed. The speaker presented sections, one from a case of Friedreich's disease, and one from a case of ordinary sclerosis, each presenting the distinctions referred to in Dr. Putnam's paper.

Dr. Seguin considered the change in the lateral columns in Dr. Putnam's specimens in front of the region of the crossed fasciculi. In one section it was even in front of the transverse diameter. The same violation of the limits of the pyramidal fasciculi had been observed in a case of his own. In this case the paresis had predominated, and the patellar and plantar reflexes had been exaggerated. In another case referred to him by

Dr. Hunn, of Albany, ataxia and posterior column symptoms had predominated, and there had been no tendon reflex. There had been anæsthesia, fulgurating pains, and ataxia of the legs and hands, with gradual paralysis. One or the other lesion would predominate in such cases, producing variation in the symptoms. Errors in diagnosis were easy. Nodular or insular sclerosis, if distributed in the posterior and lateral columns, would give the clinical picture of combined sclerosis. Charcot had even lectured upon a case as spastic paralysis, to find, upon autopsy, nodular or insular sclerosis. The diagnosis should be guarded.

Dr. Birdsall, referring to the specimens under the microscope, found in the posterior columns ordinary sclerosis, and in the lateral columns separation and swollen myelin sheaths, the axis cylinders being in position in some places, while in others there were simply spaces between the neuroglia elements, as though the myelin and axis cylinders had dropped out. In judging of this condition, one had to remember the different normal structures of the two regions, the finer fibers and finer neuroglia elements in the posterior columns. With Dr. Seguin, he found the degenerated area forward of the transverse line of the central canal, and extending even half-way up the anterior horn, taking in the region described by Gowers as the ascending cerebral tract, as determined by physiological and embryological data. The speaker inquired whether there had been any chance for post-mortem softening of the cord, which would explain the vacuolization.

Dr. Putnam thought that there had not been any such chance, as the specimen had been dropped into Müller's fluid within an hour after its removal. The nature of the change in the lateral columns showed that it had been rapid, from the fragments of granular myelin scattered about, and it was suggested that the spaces might have been caused by albuminous fluid which had been poured out and coagulated. The section showing the degenerated area anterior to the transverse diameter had been taken from the upper cervical region, where the direct cerebellar tract carried the area forward. Of the three varieties of mixed sclerosis, the spasmodic was represented by a case of Strümpell's, the ataxic by Dr. Starr's case, and the paralytic by a case of Strümpell's and his own.

The President said that he had given special study to this class of cases, and he saw no reason to change the opinions he had formed a year ago. The classification referred to as Strümpell's had been arrived at by himself before reading Strümpell's paper. It would probably occur to any one who studied the subject. The most frequent combination was tabes with paralysis, atrophy, and contractures. In other cases the tendon reflex and ankle clonus disappeared last, and the case became one of typical tabes before death. Dr. Putnam's case resembled his own, and he believed the trouble to have been primarily a myelitis encroaching upon the gray matter and extending up and down. The vacuolization was an argument in favor of secondary change; he had seen it in several cases following an acute myelitis.

Dr. Putnam stated that, as the degeneration was found both above and below the softened area, it could not have been secondary to it; also the involvement of the whole lateral tract would have required a focal lesion above, which was not ascertained.

Trephining in Epilepsy.—The President presented the calvaria and brain of a young woman trephined over the site of an old fracture for epilepsy and maniacal attacks. The operation had been done by Dr. Robert Abbe with all antiseptic precautions, yet persistent high temperature had followed, with death on the tenth day. A small subdural cyst was evacuated at the time of the operation. The autopsy showed old leptomeningitis, with recent meningitis and acute red softening under the injured part. The question of the safety of trephining was brought up.

Book Notices.

The Rectum and Anus: their Diseases and Treatment. By Charles B. Ball, M. Ch. Univ. Dub., F. R. C. S. I., Surgeon to Sir Patrick Dun's Hospital, etc. With Fifty-four Illustrations and Four Colored Plates. Philadelphia: Lea Brothers & Co., 1887. Pp. viii–410. [Price, $2.25.]

The time when the subject of the diseases of the rectum and anus could be compressed into a few pages of a small octavo volume seems to have passed, and it is a pleasure to read an exhaustive and well-arranged text-book on this subject, such as the one before us. The book covers all the ground that can be compassed without entering upon the exhaustive discussion of unsettled questions, and yet is written in a terse and concise style that makes it exceedingly good reading. In carefully going through it there is little to criticise and much to admire.

In the chapter on congenital malformations, for example, the writer has adopted a plan not heretofore used in describing the treatment of each anomaly under the same heading as the description of that form of disease, thus greatly facilitating easy reference for the practitioner.

Proctitis is divided into acute and chronic, catarrhal, dysenteric, gonorrhœal, and diphtheritic, while the possibility of verifying true gonorrhœa by the search for the gonococcus is pointed out.

The chapter which follows, on periproctitis, is not only well written, but the only one we have ever seen in any text-book on rectal surgery. There is nothing specially noticeable in the chapter on abscess and fistula, except the fact that recto-vesical and recto-vaginal fistulæ and their treatment are included, as they should be; for there is no reason why these affections should be considered as pertaining to gynæcology rather than to rectal surgery.

A special chapter is devoted to the relations of pulmonary phthisis to rectal fistula; but space will not permit even a mention of all the interesting points which the author has elaborated. We can only say that in some ways the work is far in advance of the ordinary text-book on this specialty. It is very complete without being tiresome, and the matter contained in it is all of practical importance and well arranged. The writer has done for rectal surgery what Treves in the companion volume has done for intestinal obstruction, and both works are alike creditable.

Six Hundred Medical Don'ts; or, the Physician's Utility enhanced. By Ferd. C. Valentine, M. D., ex-Surgeon-General, Army of Honduras; Member of the Medical Society of the County of New York, etc. New York: G. W. Dillingham, 1887. Pp. 9 to 144.

In six hundred "Don'ts" some of them must be good. Some of them are—good enough to make the reader wish the whole book better than it is. The late Charles Kingsley, when asked how he succeeded so well in varied directions, replied, with a smile, "I had a friend." Evidently our author has no adviser of similar caliber, else his little volume had not appeared in its present form. All that it contains, physicians worthy of the name know in a general way as they know familiar household faces; while particular and startling "Don'ts" must be taken with a grain of salt, as, for instance, this bit of advice: "Don't hesitate to call disease 'sin'; it may be your sin, your parents', your grandparents', or great-grandparents'; it *is* sin." Many of us hesitate to call disease scrofula, out of regard to public opinion. Surely we may halt a bit before throwing into a friendly camp a bomb-shell like the information that baby's croup is sin! Among the five hundred and ninety-nine other "Don'ts" these are good ones: "Don't keep the parlor dark unless you value your carpet more than your and your children's health. Don't treat eating as an ugly business to be dispatched as soon as possible. Don't travel unprovided with your own drinking-cup."

And these are "Don'ts" to which humanity at large may answer in solid unison as one individual, "We won't—if we can help it": "Don't expose yourself to a draught. Don't use sea-water or any water polluted with sewage, either for bathing or drinking. Don't make an ocean voyage on an overcrowded steamer, on which sea-sickness is more easily acquired, and, from the close quarters on a ship, infectious diseases are more liable to extend. Don't fall in love without previously ascertaining whether the object of your affection has descended from people of perfect moral and physical character." One thing is truly admirable about this little book, and that is the index, to which are devoted eighteen pages. Dr. Johnson, or Lord Macaulay, or some other wiseacre, says every book should have a good index.

Practical Microscopy. A Course of Normal Histology for Students and Practitioners of Medicine. By Maurice N. Miller, M. D., Director of the Department of Normal Histology in the Loomis Laboratory, University of the City of New York. Illustrated with One Hundred and Twenty-six Photographical Reproductions of the Author's Pen Drawings. New York: William Wood & Co., 1887. Pp. xv-217.

The title of this book has been rather unhappily chosen, as it conveys no idea of the character of the work. Practical microscopy includes a wide field in its scope; this little work treats only briefly of the structure of the principal normal tissues and some of the methods of microscopical technics. It aims to form a guide for the beginner in microscopical work, and is designed to take in part the place of an instructor. It gives all the information necessary for guidance in the selection, hardening, imbedding, section-cutting, staining, and mounting of specimens illustrating the normal tissues, and also includes the composition and method of preparing the ordinary reagents and staining dyes. In addition to this, with each specimen is given *seriatim* a description of the principal features to be observed. The author discards the freezing microtome entirely. In this certainly most modern students in microscopy will not agree with him. The cuts are original, and most of them are excellent. The book fulfills admirably the purpose for which it is designed, and will probably be gladly received, especially by students who are unable to avail themselves of any laboratory instruction.

BOOKS AND PAMPHLETS RECEIVED.

Syphilis of the Endometrium. By T. A. Ashby, M. D., Baltimore, Md. Read before the Gynæcological and Obstetrical Society of Baltimore, December 13, 1887. [Reprinted from the "Maryland Medical Journal."]

Introductory Lecture on the Ninth International Medical Congress and American Gynæcology: with a Scheme for Uniformity in Obstetric Nomenclature. Delivered at the University of Edinburgh, October 19, 1887. By Alexander Russell Simpson, M. D., Professor of Midwifery and Diseases of Women and Children in the University of Edinburgh.

Medical Lectures and Essays. By George Johnson, M. D., F. R. C. P., F. R. S., Fellow of King's College, London, etc. London: J. & A. Churchill, 1887. Pp. xxxii-900.

Electro-magnetism in Ophthalmic Surgery. With Illustrative Cases. Read before the Tri-State Medical Association of Mississippi, Arkansas, and Tennessee. By A. G. Sinclair, M. D. [Reprinted from the "Mississippi Valley Medical Monthly."]

Notes on some Obscure Cases of Poisoning by Lead Chromate, manifested chiefly by Encephalopathy. By David Denison Stewart, M. D., Chief of the Medical Clinic in the Hospital of the Jefferson Medical College. [Reprinted from the "Medical News."]

A Clinical Analysis of Sixty-four Cases of Poisoning by Lead Chromate (Chrome Yellow) used as a Cake-dye. By David Denison Stewart, M. D., Chief of the Medical Clinic in the Jefferson Medical College. [Reprinted from the "Medical News."]

Statistical Report of 5,700 Cases of Ear Disease, classified by Age, Sex, Occupation, and Disease; Causation. By S. S. Bishop, M. D., Surgeon to the Illinois Charitable Eye and Ear Infirmary, Chicago. Read in the Section in Otology of the Ninth International Medical Congress. [Reprinted from the "Journal of the American Medical Association."]

Operations for Mastoid Disease. By S. S. Bishop, M. D., etc. Read at the Thirty-seventh Annual Meeting of the Illinois State Medical Society. [Reprinted from the "Journal of the American Medical Association."]

Treatment of Chronic Suppurative Otitis Media. By S. S. Bishop, M. D., etc. Read in the Section in Ophthalmology, Otology, and Laryngology, at the Thirty-eighth Annual Meeting of the American Medical Association, June, 1887. [Reprinted from the "Journal of the American Medical Association."]

A Study of the Causes and Treatment of Uterine Displacements. By Thomas Addis Emmet, M. D. [Reprinted from Volume XII, "Gynæcological Transactions."]

The Tympanic Kymograph: A New Pulse- and Blood-pressure registering Apparatus. By Henry Sewall, Ph. D., Professor of Physiology in the University of Michigan. [Reprinted from the "Journal of Physiology."]

A Contribution to the Study of Cysts of the Vagina, with the Report of a Case. By George Woodruff Johnston, A. M., M. D., etc. Washington, D. C. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Miscellany.

The late Dr. Wesley M. Carpenter.—At the last meeting of the Medical Society of the County of New York, held Monday evening, the 23d inst., resolutions relating to Dr. Carpenter's death having been presented, Dr. Daniel Lewis said:

"Mr. President: In moving the adoption of these resolutions it seems eminently fitting to briefly review the life of one whose official relations with the society have been of such importance and value in every department of its activity. Dr. Carpenter was chosen assistant secretary in 1878, served in that capacity two years, and was then advanced to the position which his death has left vacant. It is a question whether his services have been appreciated at their full value, but their worth will become more apparent when we undertake to find in any one man all the sterling qualities which he possessed. By virtue of his office he was also secretary of the Comitia Minora, where his duties were of almost equal importance. He was always the first member to arrive at a meeting; every item of business was arranged in regular order for presentation, so that no time was lost; nothing was ever forgotten or mislaid by him; supplies of all kinds for his work were always provided in season. No notice of a meeting of the society or of the Comitia Minora ever appeared behind time, and, to the best of my knowledge, no typographical error ever appeared in a notice during the decade in which he attended to such matters.

"He was a good parliamentarian, his experience as a Member of the Assembly, in 1869, having doubtless been an aid to him in that direction. His suggestions were often of great value to the presiding officer, yet his high sense of official courtesy prevented his offering advice unsolicited. But more valuable than all else perhaps was his accurate knowledge of all the proceedings of the society, even preceding the date of his election to membership in 1875. You will all readily recall occasions at our meetings when, in the course of a discussion, Carpenter would rise in his place, and, looking over his eye-glasses, settle the matter by giving a *résumé* of all rules, regulations, or precedents bearing upon the disputed question. No one ever questioned his authority; it would have been rash to undertake it, for he was always right. I never knew him to take a position from which he was compelled to retreat.

"These, then, were the qualities most conspicuous in him as a secretary: punctuality, accuracy, firmness, wisdom, knowledge, and absolute reliability. To enumerate such qualities is equivalent to saying that he had a well-balanced mind, thoroughly trained for its work, with a high moral sense governing all his actions, for such characteristics are inconsistent with sensuousness or immorality.

"In seeking the source of such a vigorous and noble character we must doubtless take the path to the old farm at Erieville, N. Y., upon which he was born, August 2, 1839. There were doubtless formed those habits of persevering industry which made the sturdy manhood of later years. There is no place so favorable to a boy's healthy mental and moral growth as the quiet hamlet, far removed from all the artificiality and allurements to vice which attract a young man when he leaves the old homestead for college or to begin life in a great city. Without knowing much of his parents, I venture to assert that they were religious people. That fact alone would account for the statement made at his funeral, that in all the years since he left his birthplace he had sent his yearly contribution to the little old church, because it needed his assistance.

"He was eminently a student of medicine, and few men had such an absolute command of their resources. Had it been otherwise, we can not imagine how he could have edited the 'Epitome,' which required extensive research, assisted to a large extent in the preparation of the 'Medical Record,' filled a professorship at the University Medical College with marked success, written books, reported the proceedings of State, national, and international societies, and been secretary of three societies besides our own. Notwithstanding all this immense literary and professional work, he was always ready for a friendly chat, was glad to meet a friend, was, in fact, of a most genial disposition.

"It was my good fortune to be his friend for several years, especially since we visited England and met accidentally one morning at the Paddington Station, both of us bound for the meeting of the British Medical Association at Worcester. There we met Dr. Austin Flint, who was summering at Malvern, a few miles distant. We three Americans went out and dined together in a most charming quarter of that old cathedral city. That quiet hour is recalled most vividly to me now, not only as the beginning of a very intimate acquaintance with Dr. Carpenter, but because two years later he consented, at my request, to read before this County Society a memoir of Dr. Flint, whose sudden death is fresh in the memories of us all, while to-day I am trying to perform the same sad office for the second of the trio, whose death was even more untimely and unexpected than the first.

"It appears probable that such intense mental labor as his, so unceasing and so long continued, with no recreation except a change of work, hastened his death, even if it may not have been the immediate cause. Is it possible that if those of us who saw his methods, and knew that he was doing more than human strength can long endure, had urged upon him the necessity of relaxation of physical and mental rest, the fatal day might have been long postponed?

"His nature was a sensitive one, although his reticence concerning himself may have given a different impression to those who did not know him well. There is no more lonely place for a man of his habits than the great city. Could we not and should we not have been more expressive of the appreciation we all had of his services?

"We shall greatly miss his presence at all the places where doctors meet. We shall probably not soon see his equal in the special work of his choice, and we shall never find a more upright, fair, and honest man, in the full sense of the term, in our own or any other profession. Those who witnessed his self-sacrificing life must have been impressed with the fact that no ordinary motive inspired him.

"Many years ago I remember hearing a legend which represented the so-called transmutation of vital forces and their perpetuation.

"A piper was playing upon his rude instrument when the sweet notes of the nightingale came floating across the meadow. Just then a cruel huntsman wounded the songster and he came fluttering down upon the musician's instrument and expired. In dying, the divine harmony of the nightingale's song was imparted to the pipe, which from that time forth became the flute, the most beautiful of all wind instruments. When we remember that for scores of coming years our friend, long anxious and lonely, may, in the life of the talented young musician, be the source of the very refinement of pleasure to the inhabitants of two hemispheres, may we not esteem this transmutation of his energy the very best of his history?"

Medical Education in the United States and Canada.—In the "Report on Medical Education" submitted at the recent annual meeting of the Illinois State Board of Health we find the following:

"The text of the Report on Medical Education for 1887 contains the data of historical interest pertaining to 258 institutions, dating back to 1765; the last report contained such data for 253 institutions. It contains, also, all necessary information as to the title, location, addresses of corresponding officers, faculty, curriculum of study, length and dates of sessions, requirements for matriculation and for graduation, fees, number of matriculates and of graduates at each session since 1877—and other facts of interest concerning the 129 medical colleges now in existence. It also embraces the statistics of a total of 116,529 medical students, classified by schools of practice, by States, by individual colleges, and by sessions for each year during the period 1877–'78 to 1886–'87, inclusive.

"The changes noted by a comparison with the report of 1886 show a net gain of two regular schools and a loss of two eclectic schools, while the others remain unchanged. As compared with the conditions which existed prior to the enforcement of the Schedule of Minimum Requirements—that is, prior to the sessions of 1883–'84—the report shows that there are now 114 colleges which exact an educational requirement of intending matriculates, as against 45 formerly—there being no change in this respect from the previous year; that 43 colleges now exact attendance upon three or more courses of lectures, as against 22 formerly—being a gain of two over 1886—and 57 others make provision for a three or four years' graded course; that hygiene is now taught in 114, and medical jurisprudence in 112 colleges, as against 42 and 61, respectively, prior to 1883. There is an increase in the average of lecture-terms from 23·5 weeks to 24·9 weeks during this period, and 114 colleges now have terms of five months or over, and 63 have terms of six months or over, as compared with 101 and 42 respectively. There is only one medical college that has a course of less than 20 weeks, the Medical College of Georgia.

"The effect of this improvement in methods of instruction and of the higher qualifications demanded before graduating the student is best seen in the diminishing percentage of graduates to matriculates. The tables embraced in the report now cover a sufficiently long period —from 1877 to 1887, inclusive—and deal with large enough numbers—116,529 matriculates and 37,493 graduates—to give them a positive value for this purpose. Errors arising from unusual or accidental conditions are largely canceled or diminished in importance in these aggregates, and the inferences drawn may be accepted as fairly trustworthy.

"The first fact of importance which arrests the attention in this comparison is that, notwithstanding the growth of population, the total number of medical students has never yet reached the proportions attained in 1882–'83. The sessions of that winter were attended by 13,088 students, of 1883–'84 by 12,763 students, of 1884–'85 by 11,975 students, of 1885–'86 by 12,321 students, and of 1886–'87 by 12,948 students. Although there was a gain last year of 627 students over the attendance in 1885–'86, the aggregate in 1886–'87 was still 140 less than in 1882–'83.

"The effect of a higher standard of qualifications for graduation is further shown in the diminishing percentage of graduates to the total number of students. In 1882–'83 out of every 1,000 matriculates 322 were graduated, taking both the United States and Canada and all schools of practice into the account. In 1886–'87 only 294 out of every

1,000 matriculates were graduated. In the United States alone in 1882–'83 out of every 1,000 matriculates 331 were graduated, while in 1886–'87 only 305 out of every 1,000 matriculates were graduated."

The "Dietetic Gazette."—This is now the name of the "Journal of Reconstructives." Practically, it is a new journal, much improved in appearance and in other respects. It is edited by Dr. George B. Fowler, whose experience in editorial work is apparent even in the first number. It is published by Mr. John Carnrick.

The Tokio Medical Library.—It appears by the catalogue that the library was established in January, 1885, under the auspices of the *Sei I Kwai*, or Society for the Advancement of Medical Science in Japan, with the object of forming a reference library, and of encouraging the study of medicine in the western languages. It contains nearly 1,500 volumes, mostly in the English language. These books have been obtained by donation or, in the case of periodicals, by exchange with the "Sei I Kwai Medical Journal," the organ of the society. The names of the donors to the library of *books*, *money*, or *instruments* during the past three years are given in a list appended to the catalogue. Mr. William Wood, of the firm of William Wood & Co., New York, has presented over 1,000 volumes of "Wood's Library of Standard Medical Authors"; Dr. Robert T. Wilson, of Baltimore, has presented nearly 200 volumes; and Dr. H. C. Wood, of Philadelphia, has presented over 100 volumes. The library possesses the largest collection of English medical works in Japan. Donations are gladly received and thankfully acknowledged. They can be sent to the care of the New York Agency of the Yokohama Specie Bank, No. 7 Warren Street.

The New York Post-graduate Medical School and Hospital.—At the annual meeting, held January 17th, at the hospital, Dr. D. B. St. John Roosa was elected president for the ensuing year, Dr. William A. Hammond vice-president, Dr. W. Oliver Moore treasurer, Dr. George H. Fox a director, and Charles F. Clark, Esq., Dr. H. T. Hanks, Dr. Seneca D. Powell, and Dr. Charles C. Lee corporators. According to the treasurer's report, the financial condition of the school was more flourishing than ever before, and the number of matriculates had increased over eighty-seven per cent. during the year. The bacteriological laboratory, furnished with the most approved apparatus, has recently been opened. Dr. A. D. Rockwell has been appointed professor of electro-therapeutics, Dr. J. E. Weeks instructor in bacteriology, and Dr. George T. Jackson instructor in diseases of the skin.

The Philadelphia Polyclinic.—Dr. H. Augustus Wilson has been appointed professor of orthopædic surgery, and Dr. A. W. MacCoy professor of diseases of the nose and throat.

The Copyright of Bromidia.—The "St. Louis Medical and Surgical Journal" says: "Of all the curious reading that we have enjoyed in some time, we think that afforded by a communication from Dr. F. E. Stewart to the current number of the 'Druggists' Circular' certainly caps the climax. It affords a splendid illustration of the wisdom of the adage which advises the shoemaker to stick to his last. Whenever a physician strays from his own profession into the intricacies of the law, and especially of the patent laws of this country, his feet are in dangerous and slippery ground, no matter where his head or heart may be. In the present paper, Dr. Stewart attacks the recent decision of the United States District Court in the matter of the suit of Battle & Co. against the Grosses (Daniel W. and Edward Z.) for infringement of their copyright of bromidia. He declares that the decision is not final or binding, and advises the Grosses and druggists generally not to pay any attention to it. Dr. Stewart thus puts himself in contempt of the United States courts, and advises others to place themselves in the same foolish and dangerous predicament. The queer part of the matter, however, is that every reason which he advances against the validity and justice of the decision is the strongest possible argument in its favor, and the reader must be obtuse indeed not to see that it is so. This view of it was evidently taken by the editor of the 'Circular,' who says: 'While giving Dr. Stewart's argument publicity on account of its novelty, we think it proper to remind pharmacists that they are bound by the decision so long as it is allowed to stand'—which advice is good, sound sense, like pretty much everything that emanates from the editor of the journal quoted."

The New York Academy of Medicine.—At the last meeting it was announced that the medical books belonging to the late Dr. William D. Schuyler had been given to the library by Mrs. Schuyler, to whom a vote of thanks was passed.

The Ohio State Sanitary Association will hold its fifth annual meeting in Toledo on Thursday and Friday, February 9th and 10th. The officers are Professor E. T. Nelson, Ph. D., of Delaware, president; Dr. D. H. Beckwith, of Cleveland, Dr. John McCurdy, of Youngstown, and Dr. Byron Stanton, of Cincinnati, vice-presidents; Dr. R. Harvey Reed, of Mansfield, secretary; and Dr. L. C. Herrick, of Columbus, treasurer. The programme includes the titles of a large number of papers on subjects of great practical importance, by distinguished physicians, architects, engineers, and others.

The Alumni of the Bellevue Hospital Medical College will hold their annual dinner at the Buckingham Hotel, Fifth Avenue and Fiftieth Street, on February 14th, at 8 o'clock P. M. Tickets, at $5 each, may be had of Dr. W. H. Katzenbach, No. 22 West Forty-fifth Street.

The Medical Profession of Easton, Pennsylvania, Fifty-five Years Ago.—In the "Easton Daily Express" we find a vigorous article, taken from the "Philadelphia Times," by Dr. Traill Green, of Eastwood. Dr. Green says:

"The writer finds it to be his duty, in deference to the memory of very worthy members of the medical profession of Easton, Pa., in 1830–'33, to reply to statements made by Dr. Gross in his autobiography. He feels especially called to make this reply because, in a review of the autobiography in a paper having a wide circulation, the remarks of Dr. Gross on the physicians of Easton were quoted, and in that way public attention was called to them as it would not have been by the autobiography. The writer has no personal grievance to complain of, as he did not enter the profession until after the departure of Dr. Gross from Easton. The persons he referred to he knew as physicians in good standing in their profession, and after 1836 enjoyed intimate association with them. One of them was physician in his father's family for forty years, and another occupied the same position for several years. Only one of those criticised by Dr. Gross is now living, having his residence in another place. Many of the relatives and patients of these good men are still living, and have been greatly grieved by the remarks of Dr. Gross on their professional reputation.

"These are the remarks of Dr. Gross's 'Autobiography,' vol. i, page 56: 'The medical profession of Easton at the period in question was in a decidedly mediocre condition, without science, without learning, without progress, and apparently without ambition. Upon one thing all were agreed—they all bled, all gave emetics, all purged, all starved their patients. They were all real Sangrados, mowing down alike the infant, the youth, the adult, and the old man. Very few of them ever read a medical book. The remuneration for professional services was contemptible in the extreme. For a visit in town the ordinary charge was fifty cents, and double that sum for a ride into the country.'

"The physicians who were in practice at that period and did the professional work of the town and surrounding country were Drs. John Cooper, Joseph K. Swift, Samuel C. Gwinner, and Stewart Kennedy. None of them are now living, and only one other, as stated above, who was in the profession at that time is still living, and he may be included with those above named as worthy of a better appreciation than that made by Dr. Gross."

Dr. Green gives interesting sketches of these gentlemen and of the times in which they lived. Of one of them, Dr. Swift, he says:

"Dr. Swift was a man of distinguished culture, a constant reader of literature and science. It is singular that he should have been classed with the Easton physicians, 'without science and without learning' ('Autobiography,' page 56), when on page 57 we read: 'He was undoubtedly a man of brains, with clear intellect'; 'early in life their little home was the resort of most of the prominent strangers who visited Easton on business or pleasure.' And it may be added that the most cultivated people of the town sought the society of the doctor and his wife to the end of life. It was never known, as remarked by Dr. Gross, that 'Dr. Swift possessed, as he imagined, a pre-emptive right to the best practice in the place'; nevertheless he was recognized as the best educated physician and surgeon of the town, and, with Dr. Cooper, for many years divided the largest and best practice of the town. His medical education, taste, and mechanical skill would have made him one of the best surgeons of his time had he been connected with a hospital. His introduction of adhesive plaster in making extension in fracture has made him known wherever surgery is practiced. Dr. Gross's allusion to his poverty as evidence of the want of success in his profession is very unkind ('Autobiography,' page 57). He lost his property, as many others have, by giving his name as indorser on the paper of friends. As a highly cultivated scholar, a distinguished physician and surgeon, Dr. Swift is well remembered by the older citizens of Easton. The writer is happy to give a brief extract from a letter which he received a few days ago from an intelligent and well-known physician: 'Although I never knew Dr. Swift personally, I have always heard him spoken of as a man quite versed in the science of his time. I have quite a number of the minerals named by him and given to me in exchange; and what I have done in mineralogy was greatly the result of an awakening to the subject from hearing of Dr. Swift's success.'"

. . . .

"It only remains to speak of 'the mowing down alike of the infant, the youth, the adult, and the old man by bloodletting.' The writer thinks it can be said of the physicians named above that they were skillful and men of good judgment. 'The killing and mowing down' are terms used very loosely and very frequently. Dr. Cooper, in his last sickness, said to two of the physicians of Easton: 'I was never charged with killing more than three of my patients by bloodletting. Two of these are still living, and one died ten years after the operation from want of bleeding.' Such killing has been done very frequently. Dr. Gross did not believe in any other kind, and surely did not fear that bleeding would kill aged and feeble persons, for he writes: 'A tall, slender gentleman of this city, nearly eighty years of age, in whom a severe attack of asthma was complicated with great congestion and slight inflammation of the lungs, the abstraction of less than six ounces of blood by the lancet led to speedy convalescence and to a complete cure. I verily believe that if this gentleman had not been bled he would have died. In certain forms of phthisis (consumption), venesection, judiciously employed, is frequently productive of great benefit. I remember the case of the late Mr. Benjamin Drake, of Cincinnati, who labored for many years under diseases of the lungs, associated with tubercular deposits, the more urgent symptoms of which were always promptly relieved by the loss of eight to sixteen ounces of blood by venesection. I have always felt satisfied that his life was materially prolonged by this treatment. Dr. Rush was in the habit, as Sydenham had been before him, of bleeding in every case of phthisis attended with a hard pulse, or a pulse rendered weak by the laborious transmission of blood through the lungs. In one of his cases he bled eighteen times in two weeks, and in another fifteen times in six weeks, with the happiest effects.' Dr. Gross says he 'cites these instances to show that a system borne down by disease may react favorably under what, to us of the present day, appears as a most heroic measure.' (Dr. Gross, 'A Discourse on Bloodletting,' 'Transactions of the American Medical Association,' vol. xxvi, 1875, page 433.)"

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"Dr. Gross deserves great praise for his advocacy of bloodletting, and the medical profession will thank him for the good words he uttered again and again in commendation of it. His prediction will doubtless come to pass. 'Bleeding will again come into fashion. And, although I am not a prophet, nor the son of a prophet, I venture to predict that the day is near at hand, if indeed it has not already arrived, when this important element of treatment so long and so shamefully neglected will again become a recognized therapeutic agent, and will thus be instrumental in saving many lives, as well as many an eye, many a lung, many a joint, and many a limb.' (*Ibid.*, p. 431.) Is it not strange that one who so practiced bloodletting and so earnestly recommended it could so hastily condemn the men of Easton of 1830–'33, who with good judgment practiced as wisely as he did? The writer can not forget how two free bleedings by Dr. Cooper, in his own Easton home, in an attack of pleuro-pneumonia, in which he attended him in youth, brought him speedy relief and left his lungs in good condition. What result did they obtain? Professor J. William White, of the University of Pennsylvania, in his article, 'A Century of Medicine,' says that during one of the epidemics of yellow fever, near the close of the last century, 'Dr. Rush bled Dr. Griffith seven times in five days, and the latter lived for many years—until June, 1826.' In the treatment of inflammation of the organs of the chest Dr. White remarks: 'As a matter of fact, their results were not bad. The proportion of recoveries in such cases compared very favorably with those of earlier times of which we have any knowledge, and not unfavorably with the statistics of many modern practitioners.'

"It is seen from the writings and practice of Dr. Gross that he bled persons, 'slender and nearly eighty years of age'; consumptives, to the amount of eight and sixteen ounces of blood; that he refers to the practice of Sydenham and Rush, who bled consumptives freely and frequently, 'with the happiest effects'; of the frequent bleeding of women, so common for a time, he says: 'I do not know that I ever heard of one that was injured by the practice'; he commended it in inflammatory and non-inflammatory diseases, in the young and aged. When has the most ardent advocate of bloodletting ever asked more than Dr. Gross taught as to bloodletting? The writer does not notice other remarks of Dr. Gross, 'jealous,' 'unsociable,' etc., as professional defects were the serious charges.

"The writer can not reconcile Dr. Gross's charges of ignorance with his advice to a young medical student against obtaining a good education. In a review of the autobiography of Dr. Gross in the 'American Journal of the Medical Sciences,' October, 1887, p. 481, we read: 'That the classical training which he experienced during these two years was of incalculable service to him no one who is familiar with his writings can doubt; and yet it is due to the truth of his history to tell, what is not mentioned in his diary, that when, in 1845, a pupil in his office became the subject of similar convictions, and consulted him as to the propriety of resorting to Transylvania University, a noted classical institution at Lexington, Kentucky, he advised against the scheme. We have authority for saying that the pupil alluded to has never ceased to regret his acceptance of the advice. In fact, it would seem, from an entry made July 18, 1883, that his early opinion as to the necessity and special advantage of the acquirement of the dead languages preliminary to the study of medicine, or any other profession save theology, underwent some modification. This is not the place to discuss the question, but we may be allowed to express the hope that the views of Charles Francis Adams, Jr., have not been, and may never be, generally received with favor, even within the precincts of Harvard University.'

"The medical practice of the period criticised by Dr. Gross was not peculiar to Easton, but prevailed everywhere, and was his as well."

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality," for December, 1887, there were 582 deaths during the month, including 1 from cholera morbus, 4 from cholera infantum, 27 from croup and diphtheria, 11 from cerebro-spinal meningitis, 3 from dysentery, 1 from diarrhœa, 3 from erysipelas, 25 from typhoid fever, 3 from influenza, 11 from measles, 2 from whooping-cough, 3 from septicæmia, 2 from scarlet fever, and 10 from small-pox.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending January 20th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending December 31st corresponded to an annual rate of 24·8 in a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 18·5, and the highest in Bolton, viz., 33·9 in a thousand. Small-pox caused 24 deaths in Sheffield, 2 in Bristol, 1 in Leeds, and 1 in Hull.

For the week ending December 24th the deaths registered corresponded to an annual rate of 20·8 in a thousand. The lowest rate was recorded in Derby, viz., 15·5, and the highest in Blackburn, viz., 31·7 in a thousand. Small-pox caused 21 deaths in Sheffield, 2 in Bristol, and 1 in greater London.

London.—One thousand eight hundred and eighty-two deaths were registered during the week ending December 31st, including 28 from measles; scarlet fever, 40; diphtheria, 22; whooping-cough, 130; enteric fever, 19; and diarrhœa and dysentery, 12. There were 442 deaths from diseases of the respiratory organs. Different forms of violence caused 74 deaths, and 3 suicides were registered. The deaths from all causes corresponded to an annual rate of 23·3 in a thousand. In greater London 2,326 deaths were registered, corresponding to an annual rate of 22·4 in a thousand of the population. In the "outer ring" 9 deaths from diphtheria; measles, 13; scarlet fever, 6; and whooping-cough, 20, were registered.

Ireland.—The average annual death rate represented by the deaths registered during the week ending December 31st in the sixteen principal town districts of Ireland was 33·9 in a thousand of the population. The lowest rate was recorded in Lurgan, viz., 10·3, and the highest in Sligo, viz., 43·3 in a thousand.

Dublin.—Two hundred and forty-five deaths were registered during the week ending December 31st, including 1 from measles; whooping-cough, 3; scarlet fever, 6; diphtheria, 2; diarrhœa, 1; and dysentery, 1. Diseases of the respiratory organs caused 70 deaths. Four accidental deaths were registered, and in 41 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 36·2 in a thousand.

Scotland.—The deaths registered in eight principal towns during the week ending December 31st corresponded to an annual rate of 24·3 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 14·6, and the highest in Paisley, viz., 35·9 in a thousand. The aggregate number of deaths registered from all causes was 607, including 14 from measles; scarlet fever, 7; diphtheria, 13; whooping-cough, 24; fever, 5; and diarrhœa, 10.

Santiago, Chili.—The United States minister, in his dispatch dated November 11, 1887, says: "Cholera has again made its appearance in Santiago. For the week ending November 5th, 40 cases were reported as proving fatal, 19 on yesterday and 14 the day previous. It has extended to the south of Chili during the winter months, and has been particularly severe in some sections. It is the general impression that it will prove as destructive to life in Santiago and its environs as it was last summer, though the Government and people are much better prepared to meet it in a sanitary point of view."

Cienfuegos.—There were 76 deaths from small-pox during the month of December, 1887, and 188 cases were under treatment January 1, 1888.

Havana.—Five deaths from yellow fever and 71 from small-pox are reported for the week ending January 7th.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow	December 24.	545,678	236	..	....	...	....	3	8	4
Glasgow	December 31.	545,678	247	..	....	....	....	1	4	8
Warsaw	December 24.	439,174	202	..	....	10	....	....	7	3
Calcutta	December 3.	433,219	253	15	....	....	....	....	....	1
Amsterdam	December 24.	378,686	144	..	....	....	....	....	....	4
Amsterdam	December 31.	378,686	156	..	....	....	...	1	1	2
Copenhagen	December 21.	290,000	....	..	....	....	...	1	5	7
Munich	December 24.	269,000	130	..	....	....	....	....	5	4
Edinburgh	December 31.	258,629	107	..	....	....	....	1	2	2
Palermo	December 25.	250,000	116	..	....	....	....	....	1	11
Belfast	December 24.	224,422	178	..	...	....	....	1	4	....
Belfast	December 31.	224,422	178	..	...	....	....	2	3	3
Bristol	December 24.	223,695	96	..	...	1	....	1	5	....
Trieste	December 24	154,500	94	..	....	12	....	....	....	2
Stuttgart	December 31.	125,510	48	..	....	....	....	....	....	1
Pernambuco	December 20.	110,000	65	..	....	1	....	....	....	....
Barmen	December 24.	108,000	35	..	...	....	1	....	....	3
Reims	December 24.	97,903	54	..	....	....	....	1	1	3
Leith	December 31.	72,297	22	..	....	...	....	....	....	1
Cienfuegos	January 2.	35,164	34	..	1	25	....	....	....	....
Guayaquil	December 16.	30,000	48	..	....	12	....	....	....	....
Guayaquil	December 22.	30,000	52	..	....	11	....	....	....	....

UNITED STATES.

Florida.—Dr. King Wylly, president of the Florida Health Protective Association, states, under date of January 16, 1888, that no yellow fever exists in Florida at present.

ANSWERS TO CORRESPONDENTS.

No. 132.—Address the secretary, Dr. W. E. B. Bavis, Birmingham, Alabama.

No. 133.—The medicinal honey of Tasmania (*miel eucalypté naturel Guilmeth*) is advertised as for sale at the Pharmacie Chevrier, 21 Faubourg Montmartre, Paris.

No. 134.—French and German medical books are kept in stock by Messrs. B. Westermann & Co., of No. 838 Broadway, New York, also by Mr. G. E. Stechert, of No. 828 Broadway. From either of these houses you can obtain monthly lists of new publications, giving the prices. The book you mention is published in parts, and the individual parts vary in price.

No. 135.—The name is French, not German, and should be pronounced like our word *blow*.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

A EULOGY ON THE LATE
THEODORE ROMEYN VARICK, M. D.,

Read before the New York Academy of Medicine, January 5, 1888.

By J. LEONARD CORNING, M.D.

Mr. President: On the 23d of November, 1887, there died at his home in Jersey City, Dr. Theodore Romeyn Varick, a surgeon of wide experience and much originality. Having by an unfortunate accident fractured his ankle, he was confined to his bed; and, though, to all appearances, far from dangerously injured, he expired suddenly from secondary shock, while congratulations upon the prospect of a speedy recovery from his injuries were yet upon the lips of his friends.

The deceased was for many years an honored fellow of this Academy, and he exhibited at all times a lively interest in its proceedings. So great, indeed, was his interest in all things medical that, up to the very day of his death, he maintained the habit of poring over a large number of native and foreign journals, to which he was a constant subscriber, in order, as he said, to "keep his mind young." Blessed with a phenomenal memory, he retained what he read, so that, whatever the theme of conversation chanced to be, he was enabled to illuminate it with an inexhaustible fund of anecdote and reminiscence. But, well able, as he was, to lay by in the storehouse of the mind no end of scientific lore, his was not a spirit to rest content with mere encyclopædic attainments. Perceiving that medical science was, from its inherent nature, eternally progressive, that no catechism could ever formulate its ultimate perfection, he laid hold upon research. Being of a practical turn of mind, and appreciating the fact, ever patent to all truly great physicians, that the chief aim of the practitioner must be to cure disease, he turned to therapeutics, as being at once the most natural and at the same time most promising outlet for his creative energies. In the atmosphere of pain which envelops great surgical clinics he plied with consummate skill the art of alleviating human suffering. In the silence of his library he sat till far into the night, waiting patiently on thought to show him how to perfect that art. When questioned as to his reasons for this constant self-abnegation, he replied: "Medicine is the noblest of professions, but the most wretched of trades." His whole professional life was the logical outcome of his idealism. On many a cold and dreary night this man of fine parts might have been seen hastening to the house of poverty, bringing his skill and the comfort of his smile. He himself never referred to these visits of mercy, but a member of his family has told me that they afforded him exquisite enjoyment. Thus did he give to the poor his invaluable services to the extent of untold thousands.

Though it is quite impossible, in a communication of this character, to give an adequate account of such a life, an attempt shall be made to chronicle some of its more salient features.

Dr. Theodore Romeyn Varick was born June 24, 1825, in Dutchess County, New York. His father, John Vreedenburgh Varick, was a native of New York city. His mother, Anna Maria (Romeyn) Varick, was a member of the Romeyn family of Hackensack, New Jersey. His uncle, Colonel Richard Varick, was attached to the staff of Benedict Arnold at the time of that arch-traitor's defection. Subsequently, Colonel Varick became private secretary to Washington, continuing to fill this honorable position till the close of the Revolutionary war. It was this Colonel Varick who was mayor of New York city from 1789 till 1800, a period of eleven consecutive years.

In 1841 Theodore R. Varick entered the collegiate department of New York University, and in 1843 he commenced the study of medicine in the same institution, graduating in 1846. Shortly after receiving his degree he obtained the appointment of assistant physician in the New York Dispensary, located at the corner of White and Centre streets. In the following year he became one of the corps of attending physicians, and served in this capacity for two years. During the year 1847 ship-fever prevailed in New York as an epidemic. Dr. Varick was unremitting in his self-sacrificing devotion to the afflicted. Three out of a staff of six physicians died of the disease, yet he never relaxed in his ministrations of mercy till he himself was prostrated. Having recovered from this severe illness, he settled in Jersey City in 1848, where he continued to practice his profession till his death.

In 1851 he became one of the incorporators of the District Medical Society of Hudson County. At the present time there is but one of the original incorporators of this society living, Dr. J. E. Culver, of Jersey City.

Owing to his arduous duties as a practitioner, Dr. Varick often experienced difficulty in finding the leisure necessary to extensive literary undertakings. In spite of his manifold duties, he found time, however, to impress his personality upon the periodical medical literature of the day. His papers, though not numerous, are always highly suggestive, and they have a practical aroma about them which impresses the reader forcibly that the writer must have been a man of wide experience and sound judgment. Here are the titles of some of his more noteworthy contributions: "Attributes of Mind, their Operations and Effects," an address delivered before the New Jersey State Medical Society, in 1864, while he was president of that body; "The Causes of Death after Operations and Grave Injuries," being an address delivered before the New Jersey Academy of Medicine, 1875; "Complete Luxation of the Radius and Ulna outward to the Radial Side" (the "Medical Record," 1867). At the time of that publication medical literature contained but thirteen similar cases. "Urticaria produced by Hydrocyanic Acid" is the title of one of his earliest papers. In 1869 he published the account of a case of "Subperiosteal Resection of the Clavicle," which excited much interest at the time. Some of his most important, indeed in some respects his most valuable, contributions are those on the employment of hot water in surgery—a mode of treatment perfected and employed by Dr. Varick as early as August, 1879. To thoroughly appreciate how much credit is due him on the score of his contributions to this field of surgery, his papers should be read with care. Take, for example, his dissertation on "The Use of Hot Water in Surgery," published in the "New York Medical Journal" for October 15, 1887. In treating of his subject he here displays the instincts of the true investigator, proceeding to handle the different phases of his theme by the aid of that innate lucidity of perception which, more than anything else, is the mark of a high grade of intellectual endowment.

It was inevitable that a man of such admirable parts should receive a wide recognition. Governor Randolph, of New Jersey, appointed him to the office of surgeon-general of the State of New Jersey in 1869, a position which he filled till shortly before his death. He was attending surgeon and medical director of St. Francis Hospital for many years, as well as surgeon to the Jersey City Hospital. The work which he accomplished in these two institutions, especially in the domain of railway surgery, procured him a national reputation; and there were many choice medical minds beyond the sea who testified to their interest in his surgical undertakings by frequent correspondence.

As a director in the Morris Plains Insane Hospital he rendered important service, introducing reforms in the mode of administration which have proved of benefit alike to the staff and to the patients of that institution.

Dr. Varick was a lover of young men. Appreciating keenly the struggles incident to the beginnings of active life, he was constantly on the alert to aid the younger members of the profession who might stand in need of his assistance. One of his students, who had conceived a profound veneration for his character, thus wrote on the receipt of the news of his death: "I, too, shall miss him, for his friendship was as abiding as his honor. While I had learned to value that friendship, his ability as a surgeon was ever before me. In his death the profession loses an able surgeon, a wise counselor, and an original and logical writer." A more truthful characterization could not have been found.

Besides his knowledge of the weighty matters of his profession, Dr. Varick was versed in those gentler accomplishments which exalt the spirit and keep the heart accorded to the loftiest aspirations of mankind. He was a musician as well as a physician. Often, when at last he had returned home, after long hours of weary responsibility, he would sit at the organ, finding in the majestic melody that rest which the philosophies of this world can not give. Thus, with his hands directed to the alleviation of human suffering, his eyes fixed upon the stars, he moved on. What wonder that the inevitable end was peace!

My own relations with the deceased were most happy. As one of the consultants to St. Francis Hospital I had frequent opportunities of witnessing his admirable work in the surgical amphitheatre of that institution. In his home I learned to value that noble hospitality which comes from a full heart and ripe understanding.

Such men are rare in any business, in any profession. Like beacon-lights amidst the storms, they at last go down, but through the vistas of memory there comes a reminiscence of their brightness which shall lead us on to greater and fuller consummations.

Original Communications.

CONGENITAL TORTICOLLIS.*

By JOHN D. S. DAVIS, M. D.,
BIRMINGHAM, ALA.

In this day of progressive surgery one can scarcely say much that is new. And while I feel that nothing is new in the principles which I advocate, I feel justified in occupying your time in the discussion of a subject from the fact that my views are in opposition to those held by many surgeons to-day.

Of the two great classes of wryneck, congenital and acquired torticollis, the former will receive attention in these remarks. Congenital wryneck is one of the many affections which in themselves are devoid of danger to life and unaccompanied by physical pain, but, from the obvious distinction they produce, are sources of lasting discomfort, uneasiness, and unhappiness, irrespective of their interference with the natural prospects of the individual. Certainly the first and greatest duty of the surgeon is to save life, yet to remove such an obstruction must be of the utmost importance, and should be the ambition of every surgeon, and to reach this end the most speedy method of procedure and comfortable apparatus should at all times be adopted. Before referring to the structural changes to be overcome, and the treatment found most successful, I wish to impress upon you that, from the study of the history of wryneck and its treatment as far back as the seventeenth century, we fall far short of the conclusion that the surgeon always made his patient comfortable while under treatment. Indeed, many of the appliances used, even at the present day, are cumbersome and uncomfortable to the patient.

While we can not always know the ætiology of congenital torticollis, it must be of importance. Whatever the pathological state, it consists in a torsion resulting from a permanent contraction of one or both sterno-cleido-mastoid muscles, often with a binding down of other tissues of the neck. When it is unilateral, the head assumes a displacement which inclines the summit toward the shoulder of the affected side, and the chin is elevated in an opposite direction.

Wryneck may be distinguished as idiopathic, that arising from functional or organic lesions of the muscle, and symptomatic torticollis.

In a general way torticollis may be the result of cold, innutrition, disease of any nature involving the organs which enter into the composition of the neck, glandular inflammation, phlegmons involving the cellular tissue bordering upon the sterno-cleido-mastoid muscles, abscesses, vicious cicatrices, cervical Pott's disease, nervous alterations, paralysis, etc., any one of which may produce the deformity known as wryneck or torticollis, Pott's disease presenting a deviation of the head from its normal position by reason of disorders existing in the cervical vertebræ.

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* Read before the Alabama Surgical and Gynæcological Association, October, 1887. Contributed by Dr. W. E. B. Davis, of Birmingham, Ala.

Of all the varieties that might be mentioned which may induce surgical intervention, the most frequent is that entitled congenital torticollis, "that which has had its origin in the alteration of the muscle itself or a lesion of the nerve connected with it."

Torticollis presents a very peculiar physiognomy. The attempt at proximity of the two ends of the sterno-cleido-mastoid muscle brings the mastoid process of the temporal bone forward and downward, approaching the sterno-clavicular articulation, giving the face a one-sided upward look.

Willie A.,* aged two years, was brought to me on March 20, 1884, for treatment of deformities which had existed from infancy. I reported him then of healthy parents, but since have learned that his mother has consumption, inherited from her mother. I found upon examination the right sterno-cleido-mastoid muscle involved, bringing about a peculiar position of the head, which was due to rotation of the head upon its axis, to allow the approximation of the origin and insertion of the sterno-cleido-mastoid muscle, and single hare-lip of the left side extending into the nostril. I placed the head as nearly as possible in its normal position, carefully retaining it in that position. While the contracted, or, as Dr. Sayre would say, contractured, parts were thus kept on the stretch, I made additional (point) pressure with my finger upon the lower fourth of the sterno-cleido-mastoid muscle (that part which was most tense), which immediately produced reflex contraction, pain, and spasm. While the muscle was in this way kept tense or on the stretch, I introduced a curved tenotomy knife flatwise through the integument, on the inner side of the muscle, three fourths of an inch above the sterno-clavicular head, carrying the knife through the tissues slowly, closely hugging the sternal head of the muscle, carrying it flatwise, closely hugging the muscle. until the clavicular side was passed, when the cutting edge was turned to the muscle, and with a sawing motion severed both heads by one long incision through a single small puncture of the skin. The knife was then turned flatwise and withdrawn as it had been introduced. The wound was covered with a strip of adhesive plaster, and the head held in a normal position by an axillary strap attached to a cross head-band, better described hereafter in this paper.

I introduce this case here as an illustration of the deformity in these cases for a second reason—viz., it is accompanied with hare-lip (which was afterward operated on), which is not a rare complication, nor are other like deformities. In the normal state the sterno-cleido-mastoid muscles are situated on the same level, have an oblique direction backward and forward, above and below, and if a line is made from one mastoid process to the other passing by the occiput, that line will correspond to the anterior third of the condyles of this last bone. In the above-described case it was far from being the same. The sound sterno-cleido-mastoid was advanced, and the intermastoid line was no longer horizontal. The muscular changes are not always confined to the sterno-cleido-mastoid, but other muscles undergo modification—the scalenus, trapezius, etc. Indeed, such is always the case in very protracted and pronounced torticollis, or when Pott's disease is a cause, these exaggerated conditions of several muscles producing a modification of the muscular and bony structures of the neck, whose development is arrested, contributing thereby largely to the failure in treatment.

The ætiology of congenital torticollis is as obscure to-day as in the seventeenth century. Professor Dr. F. A. von Ammon,* in 1839, observed that in a position of the fœtus *in utero*, where the head constantly inclined to one side, a frequent cause of origin might be found. Stromeyer observes that congenital wryneck is not rarely met with in irregular presentation—*e. g.*, in breech presentation. Others are of the opinion that through the act of delivery obstipitas capitis is caused, as, for instance, by faulty application of the forceps, or by pulling out the trunk before the head is extracted, or that by an applied force of this nature inflammations and changes of muscles and neck and superior cervical vertebræ may be produced.

Congenital wryneck attracts less attention immediately after birth than later, when the child begins to move and learns to walk, and the development of its body progresses. At the time of birth the neck of the child is very short and the chin near the sternum; and motions of the neck are not frequent. There is also that influence wanting which wryneck in the course of years exercises upon the position of the entire body as well as upon the changes of the face, upon the carrying of the claviculæ and shoulders when children run about and develop rapidly—changes which at a later time will present themselves in the most frequent manner.

Stromeyer further observes that "in congenital wryneck the form of the cervical vertebræ is abnormal," stating that "this is a reason why this affection in new-born children is so frequently overlooked."

Such was the opinion of the German and French surgeons as far back as 1716, and is the representative idea of a large majority of the surgeons to-day.

Richard Volkmann,† recently referring to the much-accepted theory of Stromeyer, "according to which the deformity originates in consequence of acquired inter-partum stretching, partial tears, and rending asunder of the sterno-cleido-mastoid muscle, or these lesions are generally followed by cicatricial shrinkings of the muscle, partly on account of keeping the head in the oblique direction for a long time, induced by pains and laxity of the muscles, until finally contraction develops, induced by disturbances of nutrition and growth," said: "This theory requires to be established."

And surely can I not say as much of all theories yet advanced relating to the ætiology of this malady?

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* Reported by me in the "Atlanta Medical and Surgical Journal," with illustrations, December, 1884, vol. i, No. 10, pp. 516–518.

* "Monatsschr. f. Med., Augenheilk. u. Chir.," Leipsic, 1839, ii, 577–580.

† "Ctrlbl. f. Chir.," Leipsic, 1885, xii, 233–256.

Volkmann, in the following language, expressing an opinion which I heartily indorse, asserts that "the subcutaneous tear, the hæmatoma of the sterno-mastoid muscle, *a name not happily chosen*, does not, in a majority of cases, lead to contraction of the muscle and to torticollis of head, as likewise in other parts of the body tears or sections of a single muscle are generally not followed by contraction." So far I agree, and, further, am of the opinion that the tearing of the muscles should be stricken out of the list of causes of congenital wryneck. And, while it is *possible* for a laceration of the muscles of the neck to occur, on account of their being too short and not pliable in consequence of the attitude of the fœtus *in utero*, or from other causes, there is no probability of its playing any important part in the aggravation of a malady already existing; on the other hand, the laceration tends to alleviation of the trouble. In a very acceptable article from the pen of Professor Petrism, of Kiel,* much of the same theory of Volkmann and Stromeyer is advocated. They are all uncertain, and can only account for a limited number of cases of torticollis. I agree in a possible number of such, but certainly the ætiology is too uncertain to attempt a further explanation for the cause of these cases than that accredited to any other malformation, such as hare-lip, equinus, rickets, strabismus, congenital cataract, etc. It is my opinion that all malformations, as a rule, are due to depraved, degraded, or low vitality, resulting from scrofulous, syphilitic, rheumatic, or consumptive parentage. In thirteen cases in my own knowledge, whose history I am in possession of, there were in ten, scrofulous parents; in one, syphilitic parents; in one, phthisical parents; in one, unknown.

F. A. Southam, M. B. Oxon., F. R. C. S.,† in 1885 wrote an article upon congenital torticollis in which he maintained that the condition sometimes met with in infants, and known as induration of the sterno-mastoid, though occasionally syphilitic in its origin, was more commonly the result of injury during delivery. It seems not unlikely that, in neglected cases of this kind, torticollis may eventually develop, but not congenital torticollis. However much congenital torticollis may appear to be the result of injury received at the time of birth, it can no longer be classed as congenital torticollis; when it is known that contusion or laceration of the sterno-cleido-mastoid, followed by inflammatory changes in the surrounding tissues (or the muscle itself), is the cause of trouble, it is to be classed as acquired torticollis. But I must here record my disbelief in such a cause for congenital torticollis.

We now come to consider the methods of treatment which have been and are being adopted for the alleviation of congenital torticollis. It may be interesting to look into the history of the treatment of a disease which opened up as far back as the seventeenth century a broad avenue along which French and German surgeons scrambled and fought for priority. It was an intense battle between Dupuytren and Guérin, also the point of departure of ardent controversies between Guérin and Bouvier. Such a struggle for priority has never been equaled; in comparison the recent fight between our distinguished and beloved Battey and the renowned Tait, of England, over a procedure in ovariotomy, was but a Lilliputian battle to a Titan conflict.

As far back as the year 1500 we learned of the failure of massage and methodic use of mechanical instruments. And while, all along, the defective character of the treatment was apparent, it was not until the eighteenth century that the treatment of torticollis furnished any success. Notwithstanding many attempts had been made, it was not until the year 1639 that Minnius discovered a tendency to contraction of tendons and muscles, and essayed to cure torticollis by cutting the sterno-cleido-mastoid muscle.

In gathering the details of the history of the operative treatment of torticollis, I have availed myself of the records of Professor M. J. Giraldès,* much of whose phraseology I am compelled to use, so accurate are his data on this one point.

In 1682 Job Meeckren† reported a case of torticollis in which the sterno-cleido-mastoid was divided by Florianus. The operation was not a success, and soon fell into oblivion, and it was only at the commencement of the nineteenth century that tenotomy was seriously studied.‡

At the time when Florianus lived the tendon of the sterno-cleido-mastoid was severed openly, either by a parallel or transverse incision, as was then done in the case of the tendo Achillis.

It was not until the year 1817 that a new example of tenotomy was put into practice by Delpech, who cut the sterno-cleido-mastoid muscle transversely. In 1822, five years later, Dupuytren # improved this operation by subcutaneous division of the sterno-cleido-mastoid in a girl of ten years of age. Ammon, in 1823, reported ‖ this circumstance in France, and, with the descriptions given by Coster and Averill, gave the operation great prominence throughout the country. Yet credit is due Bouvier for bringing the procedure before the public, through the Academy of Medicine, by drawings illustrating the operation, and demonstrating the employment of tenotomy as a surgical means. In his work he maintained that torticollis was nearly always due to contraction of the clavicular extremity of the sterno-cleido-mastoid, and that section through one opening and one operation permitted him to correct the malformation. When this was known, M. Bouvier and M. J. Guérin each persisted in the assertion that he had previously performed the operation, and it was soon detected that Dieffenbach and Syme were proceeding in the same manner for priority of the discovery.△

Giraldès sums up these controversies with the follow-

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* Langenbeck's "Arch.," xxx, p. 781; "Ctrlbl. f. Chir.," 1885, No. 7.

† "British Med. Jour.," London, 1885, vol. ii, pp. 59–61.

* "Clinical Lectures on the Surgical Diseases of Children," by M. J. Giraldès, Paris, 1869. "Med. and Surg. Rep.," Philadelphia, 1871.

† "Observationes medico-chirurgicæ."

‡ Delpech, of Montpellier, Dieffenbach, Stromeyer, Bouvier, and Guérin, all successively contributed to its progress and popularization.

"Manuel de médecine de Coster," 1829, 3d edition, p. 219.

‖ "Parallèle entre la chirurgie française et la chirurgie allemande," 1823.

△ A journal of that period, "L'Expérience," contained numerous articles on the subject, which it is easy to complete by the perusal of the "Gazette médicale."

ing results, that, "if M. J. Guérin has shown that the section was made under the skin by only one incision, it was M. Fleury, and afterward M. Bouvier, who first made the subcutaneous section of the tendon of the sterno-mastoid. However, it is just to say that M. Bouvier, in his work and in his academic presentation, designed mainly to prove the inconvenience of the subcutaneous section, which he regarded as an exceptional practice, while M. J. Guérin, on the contrary, contributed by his efforts to promote and establish it as a general method.

"It has been necessary to search in the works published anteriorly in order to withdraw from M. J. Guérin the merit of having instituted subcutaneous tenotomy. Very soon we placed our hands on the observations of Dupuytren; and M. Dezeimeris, who took part in that dispute, in place of adhering to the text of Coster, cited the translations of Ammon, and said: 'You see that Dupuytren preceded you by sixteen years.' M. J. Guérin did not acknowledge himself vanquished. He made a sharp reply to those authorizing the account of Coster and Norvill, and thought the discovery of Dupuytren was silly. . . . Discussions also took place at the Academy of Medicine—discussions that passionately commented on this journal, and which finally ended in a famous lawsuit."

Departing from purely historical details in the treatment of congenital torticollis, excluding the spasmodic, we may divide congenital torticollis for treatment into three classes:

1. Those not susceptible of material improvement.
2. Those capable of considerable improvement, but not complete rectification.
3. Those which may be completely cured.

There is but little difficulty in selecting the cases falling in the field of the first (incurable), as there is universally osseous as well as muscle involvement, dependent upon intra-uterine changes of the vertebræ, rickets, or Pott's disease.

The second class includes all those cases which may be recognized and treated early with a perfect result, but in which, from being allowed to exist until the development of the body has advanced for several years, complete malformation of the cervical vertebræ has taken place, and will not allow of perfect restoration of the head to its normal position after section of the contracted (contractured) tissues. Indeed, this seems to imply that no excuse should exist for congenital wryneck in the adult. This, I am convinced, is true where the muscular structures alone are involved. Many cases may occur under this division thoroughly amenable to treatment, yet, from bony malformation, not susceptible of complete restoration.

The last may cover all cases where no osseous complication exists. Shortened muscle from whatever cause, nerve influence or traumatic, may be divided with a perfect result. And here I will express my doubts as to the nervous origin of the disease.

Swan* assumes "that wryneck is the result of nerve influence exerted chiefly on the sterno-mastoid muscle, but also on the anterior fibers of the trapezius muscle; that the spinal accessory nerve, or its sources from the medulla oblongata or cervical cord, must be chiefly looked to as the nerve site of its production; that it is possible that the muscular and communicating branches of the cervical plexus may be involved in its production, as well as the spinal accessory, whose fasciculi extend as far as the sixth cervical nerve; that it is analogous to talipes, strabismus, or other instances of abnormal muscular contraction."

This is theoretical and quite speculative. While Swan is supported in his belief by the history of eleven cases which came under his observation—where there were convulsions in five, talipes equinus co-existed in two, strabismus in three, and chorea and rheumatism in one—it does not appear to me that that history alone would justify the conclusion he arrived at, for in the thirteen cases in my knowledge, infantile convulsions existed in nine, and harelip in one. Now, the nine cases of infantile convulsions occurred in the list of ten scrofulous patients. While it may be a fact that in cases like those reported by Swan "the medulla oblongata or cervical cord must be chiefly looked to as the nerve site of its production," do not my thirteen cases justify me in the conclusion that doubt may be expressed as to the exemption from hereditary trouble, scrofulous in its nature, in the cases reported by Swan?

The usual plan practiced by surgeons to-day is to divide the muscle subcutaneously close to its sterno-clavicular attachment, and the general plan of doing so is to puncture the skin on the inner or outer margin of the muscle. A blunt tenotome should then be run along the groove of a director, and the tendon divided from behind forward, dividing both the sternal and the clavicular origin of the muscle through the same opening.

The plan I have adopted is that taught by Dr. Sayre. It is to place the head in a normal position, or near enough to render the affected muscle or structure tense, retaining it there by competent assistance. While the muscle is in this way made tense, or put upon the stretch, I introduce a curved tenotomy-knife flatwise through the integuments on the inner side of the muscle, about three fourths of an inch above the sterno-clavicular articulation, carrying the knife through the tissues, closely hugging the sternal head of the muscle, and then carrying the blade flatwise, or introduced beneath the muscle to near the external or posterior side of the clavicular head of the muscle, when I turn the cutting edge toward the muscle, and with a sawing motion sever both heads by one long incision through a single small puncture of the skin. The knife is then turned flatwise, and withdrawn, at the same time following the point of the blade of my instrument with the finger of my left hand, so as to press out all the blood, and to prevent air from entering the wound. By this method there is less risk of wounding any large blood-vessel or nerve in close relation with the muscle at the point of division—namely, the carotid artery, the internal, external, or anterior jugular vein, or the pneumogastric or spinal accessory nerve.

The wound should then be covered with a single strip of adhesive plaster, and the head held in position by passing a rubber strap or tubing under the axilla, and fastening the two ends of this strap to a linen roller-bandage passed around the head, and held in position by a cross-bandage over the head, connecting with the roller on either side. In retaining the head support, I always fix the bandage around the head in the way just described, in preference to using adhesive straps attached to the bandage and the skin of the forehead, thus allowing of removal at will, and avoiding the irritation and unpleasantness of the plaster. The dressing should be kept on until the head has regained its normal position. In vindication of the appeal I have made to the axillary strap, I have only to use the words of Swan:* "The appliances which have been in use for the application and extension of wryneck have seemed to be unsatisfactory, inasmuch as the mobility of the scapulæ, spinal column, ribs, or pelvis—to some of which an apparatus is usually adapted—interferes with the maintenance of a fixed point whence to extend the head. The same objection applies to application of plasters to the integuments, which can in no available situation be perfectly fixed, and the plasters have the disadvantage of slipping and requiring constant adjustment." With these objections comes the author's suggestion of an extension apparatus, which has been but little used.

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* "Dublin Journal of Med. Sci.," 1879, vol. lxviii, pp. 114–119.

Pure, simple, and uncomplicated congenital torticollis needs no extension apparatus to adjust the head after a *complete* resection of the lower bound-down tissues. All that is necessary is to keep the head held upright by an axillary strap, no extension being necessary when the osseous structures are not involved; hence the consideration of the various extension apparatus and head supports now in use, and those which have been in use in the treatment of congenital torticollis, need not occupy our attention. In many cases of congenital torticollis we find the muscles firmly bound down by plastic adhesions, and several muscles involved. In these cases a good result can be had only by cutting everything that tends to bind the head down in an abnormal position. No words can be better used here to express my meaning than those of Sir Henry Thompson relating to the division of anterior urethral strictures: "If you cut one, cut all." And again he says: "If you cut at all, cut all." That is, I would cut all the tissues in which the presence of obstruction is to be demonstrated.

My observations in the history of congenital torticollis and of myotomy and tenotomy, not only in the neck, but at the foot, knee, thigh, etc., have caused me to reach the following conclusions:

1. That it is rare and doubtful if ever congenital torticollis is produced through the act of delivery, resulting from faulty application of the forceps, or from pulling out the trunk before the head is extracted; but that the cause may often be found in the low vitality of the fœtus of scrofulous parentage.

2. That complete resection of all the contracted (contractured) tissues is necessary before attempting to restore the head to its normal position.

3. That, after complete section of the tissues, the head should be placed immediately in the normal position, and retained there for ten or fifteen days.

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* "Dublin Jour. Med. Sci.," 1887, vol. lxviii, pp. 114–119.

A CASE OF
EXTRA-UTERINE (TUBAL) PREGNANCY.

RUPTURE AT THREE MONTHS; LAPAROTOMY; RECOVERY.

BY S. C. GORDON, M. D., PORTLAND, ME.,
LECTURER ON DISEASES OF WOMEN IN THE PORTLAND SCHOOL FOR MEDICAL INSTRUCTION, SURGEON TO THE MAINE GENERAL HOSPITAL, FELLOW OF THE BRITISH GYNÆCOLOGICAL SOCIETY, MEMBER OF THE BOSTON GYNÆCOLOGICAL SOCIETY, ETC.

ON September 22d, ult., I received a letter from Dr. F. E. Hitchcock, of Rockland, Me., the substance of which was as follows:

"ROCKLAND, ME., *September 20, 1887.*

"DEAR DOCTOR: I have a case now under my care which I believe to be one of extra-uterine pregnancy. My reasons for my belief are:

"*First.* She has not menstruated since June last.

"*Secondly.* She has had more or less morning sickness and giddiness, and other reflex symptoms usually accompanying the first months of gestation.

"*Thirdly.* She has had frequent attacks of deep-seated pelvic pain, at times quite severe, and followed by spurts of blood from the vagina.

"*Fourthly.* The breasts have increased in size, the areolæ are darkened, and the papillæ prominent.

"*Lastly.* Within a month there has been a perceptible enlargement in the left side, corresponding to a pregnancy of the left Fallopian tube. I feel quite sure that the enlargement is not due to any inflammatory process, for there has been no increased temperature to warrant a belief in that theory.

"Within a few days she manifests symptoms which indicate that rupture may soon take place. In case I telegraph you, be sure to come by first train prepared to operate.

. . . .

"Very truly yours,
"F. E. HITCHCOCK."

About nine o'clock P. M. of September 23d I received the following telegram:

"Refer to my letter of Wednesday. Sac burst this P. M. Profound shock and extreme collapse, but reaction has taken place. Come by boat prepared to make laparotomy.
"F. E. HITCHCOCK."

I arrived at 6 A. M., September 24th, saw the patient, and confirmed the diagnosis. We summoned a consultation consisting of Dr. Banks, of Rockland, and Dr. John Walker, Jr., of Thomaston. The patient was suffering from severe pain, with extreme hyperæsthesia of the abdomen and symptoms of well-marked peritonitis. She could not tolerate the slightest touch of anything anywhere over the abdominal surface. We decided to etherize, in order to afford the members of the council opportunity to examine. This being done, I was able by the bimanual touch to distinctly outline a tumor in the left side, separate from the uterus, which was also enlarged.

The proposition to make abdominal section was unanimously assented to, and I proceeded, assisted by Dr. Hitchcock, Dr. Banks, and Dr. Walker. I found the well-marked indications of peritonitis in adhesions of the tumor to the wall and omentum, also of the peritoneal surfaces to each other at different points. Quite an amount of serum had accumulated, due, probably, both to peritonitis and the extravasated blood which followed the rupture; of this there was about three pints, some of the clots being almost black, while others were bright red.

This difference in color, I am inclined to think, was from the different ages of the clots. Dr. Hitchcock believes that she had a small hæmorrhage a few days before the extreme collapse took place, as she had very severe pain followed by some exhaustion.

The tumor proved to be a gestation sac of the left Fallopian tube, and had undoubtedly existed for about three months, the fœtus being about three inches long. After removing the tumor and blood, and sponging carefully and ligating all bleeding vessels, I poured a quart of very hot carbolized water into the cavity, rinsed the parts, and thoroughly sponged it out; introduced a glass drainage-tube, and closed the abdominal wound with silk, dressing with gauze and absorbent cotton. The operation was closed about nine o'clock, sixteen hours after the rupture. I left the patient at 1 P. M., having given two hypodermatic injections of morphine sulphate, a quarter of a grain each. She was very comfortable, having slept more than half the time for the last hour before I left. From that time forward all signs of peritonitis disappeared, and the recovery was uninterrupted.

The temperature was at no time above 101°, and that only for a single day, most of the notings being 100° or below during the first week. There were some vomiting and nausea for a few days, but a small quantity of morphine controlled all the troublesome symptoms.

I am perhaps needlessly minute in these details, but, as they have a bearing on some conclusions drawn from the case, I am obliged to be thus explicit. The patient is about thirty-three years old, but was married very young, and had one child in her early married life. From the birth of this daughter (now about sixteen years of age) until this summer she had never been pregnant, although no means had been used to prevent conception. This fact was at first somewhat an obstacle to a ready diagnosis of the real condition, although she manifested some of the early signs of pregnancy. The absolute diagnosis of extra-uterine pregnancy was made by Dr. Hitchcock about a week before rupture, and principally by bimanual examination and being able to clearly separate the tumor from the uterus.

Lawson Tait thinks a diagnosis before rupture very difficult to make, and questions its being made. Certainly in this case Dr. Hitchcock had succeeded in making it, and it would seem as if he had all the essential elements for basing such an opinion upon. The patient had been a woman of very good health in the years intervening between the pregnancies, with no history, so far as I could learn, of any pelvic lesions.

Mr. Tait believes that tubal pregnancy occurs where there has been salpingitis that has destroyed the epithelium of the tube, thus allowing the ovum to adhere to its walls, where it becomes impregnated. In this case I am unable to say whether or not such a condition obtains.

So far as I am able to learn, this is the second successful case of laparotomy for tubal gestation after rupture had taken place, that of Dr. Arthur Johnstone, of Danville, Ky., being the first. The cases differ in this particular: his operation was done thirty days after the first rupture, while mine was done fifteen hours after, and I think before all hæmorrhage had ceased. On this last point I am not quite sure. I removed some very fresh clots and some fluid fresh blood, but whether due to extravasation *immediately* before the operation or to the manipulations made to break up the adhesions I can not say. My anxiety to remove the sac as rapidly as possible prevented me from noticing any minor matters connected with the case.

Dr. Johnstone says he found many very black clots, some even "inspissated"; this he thinks due to former lesser hæmorrhages. In my case there were no inspissated clots, at least none were noted.

Dr. Robert P. Harris, who is certainly authority on abdominal sections, writes me under date of November 7th:

"This operation may be divided into two classes. In one the incision is made while the hæmorrhage is still active, and in the other after it has nearly or entirely ceased and the woman has in a measure recovered from the shock." The first he would denominate "primary" laparotomy, the latter secondary or "hæmostatic laparotomy."

I think in my case the patient had a much better chance for life fifteen hours after rupture than if she had been operated upon at the period of collapse and while hæmorrhage was still active.

This is a point that only experience must determine. If we could be at all sure that hæmorrhage would cease before it exhausted the patient, we should all say, wait until reaction takes place. I feel quite certain that peritonitis is no serious bar to operation, but, from my experience in this case and several other cases of peritonitis from different causes where I have performed laparotomy, I am quite confident that from the moment of the operation the peritonitis ceased. In all of these cases I washed out the abdominal cavity with hot water.

I believe the profession have been too much in fear of reopening the wound after abdominal section where peritonitis had supervened. I have no doubt it would be equally favorable were it done in peritonitis from other causes—intestinal obstruction, tubercular deposit, wounds, etc. Hereafter I shall not allow a patient in this condition to die without operating where consent can be had.

Dr. Harris closes his letter by saying, "There is no other successful one on record in the United States but the one occurring in Danville."

The conclusions I would derive from this case, while more or less crude and more in the form of suggestions than conclusions, are as follows:

First. If it is true that the diagnosis of extra-uterine, and especially tubal, pregnancy is not so difficult as to prevent us from being certain in a majority of cases, why even attempt fœticide by electricity or any other means, which at the best leave a foreign body in the abdominal cavity, where it may produce septicæmia or other troubles, and keep the patient in a state of invalidism for years? Why not at once remove it by laparotomy, as we would any ovarian tumor? The risk can not be very much greater. Why wait and take the risks of rupture from which the patient may at once die, or a few days later die from peritonitis?

The risk of waiting until competent surgeons can be secured may be too great, even if we permit it to go on to rupture. Lives may be lost even under the most favorable circumstances if we wait for this to take place, and it is liable to occur at almost any period of gestation.

Second. I am satisfied that peritonitis is no bar to operation, but, on the contrary, that the operation is a decided relief to the peritonitis, not only from the cutting and consequent hæmorrhage, but by removing any material which if left might become septic, and this suggests that any plan which tends to relieve the congested vessels and eliminate any fluid exudate must be beneficial in preventing a fatal termination in peritonitis from whatever cause. Acting upon this theory, Mr. Tait has for a long time used the saline cathartics in beginning peritonitis with marked success. My own experience in several cases within the past six months confirms me in the belief that this is a far safer method than the long-continued and universal opium treatment of Alonzo Clark.

Third. That the danger from hæmorrhage is a very grave one. I am quite sure that in this case, had not Dr. Hitchcock given the patient the most faithful and persistent attention for hours, she would never have rallied from the collapse. The rupture was a large one, occurring just at the junction of the tumor with the remaining, proximal portion of the Fallopian tube. The fat, firm abdominal walls, with a small abdominal cavity, contributed to arrest the hæmorrhage much earlier than would have happened had the condition been the reverse. Therefore I am forced to the conclusion that, if we are sure of our diagnosis, laparotomy at once is the best practice.

AN ELECTRIC NASAL SAW.*

By JOHN O. ROE, M. D.,
ROCHESTER, N. Y.

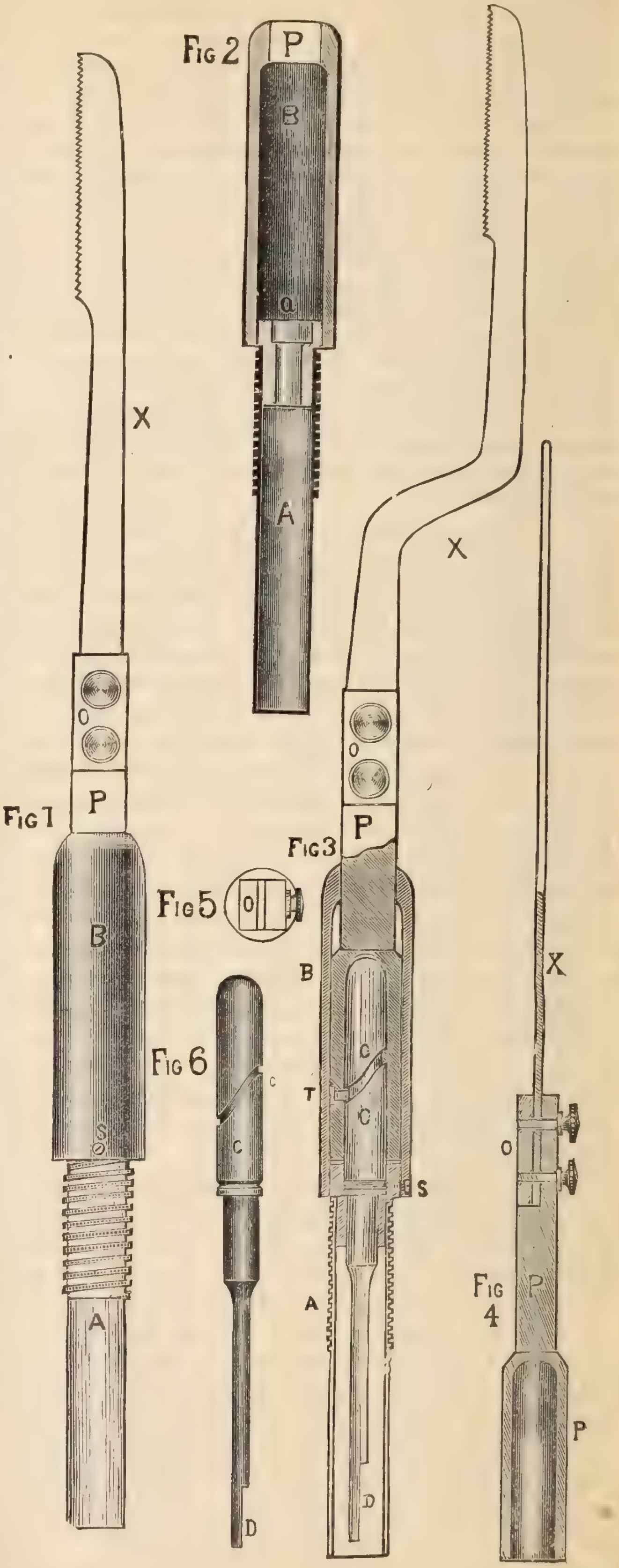
The instrument herewith presented is a nasal saw, which I have devised to be worked by an electric motor. The mechanical construction of this device is illustrated by the accompanying figures.

In Fig. 1 is shown a view of the complete instrument, which consists essentially of the reciprocating plunger P, carrying the nasal saw X, which is firmly held at the end of the plunger by the clamp O, drawn tightly around the end of the saw by means of thumb-screws. This plunger moves in the shell B, to which is attached the shield A.

Fig. 2 represents the interior of the shell B, and the mode in which the shield A is attached to it. The interior of the shell is cylindrical, with the rectangular opening P in the upper end. The hollow shield A is inserted into the lower end of the shell, forming the step *a*.

In Fig. 3 is represented the mode in which the plunger is fitted in the shell already described.

The construction of the plunger itself is shown in Fig. 4. The end of the plunger P, which carries the saw, is rectangular, as shown in the cross-section (Fig. 5), and fits nicely into the correspondingly shaped opening P (Fig. 2) in the upper end of the shell B, in which it is permitted to slide forward and backward. The rest of the plunger P is cylindrical and is nicely fitted to the interior of the shell B, which thus acts as a guide to steady the motion of the plunger, and which is bored out longer than the plunger to allow space for the length of the stroke or travel of the plunger. The cylindrical end of the plunger (Fig. 4) P is bored out so as to receive the revolving cylinder C (Fig. 6), which is formed on the end of an ordinary drill-shank D.



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* Read before the American Laryngological Association at its ninth annual congress.

This cylinder has a shoulder near the end where the shank D is attached to it, and this shoulder forms a bearing which is supported by and revolves on the step *a* (Fig. 2), already referred to.

Near the shoulder a small groove is turned in the cylinder C, so as to receive the point of the screw *s* (Fig. 3), which passes through the shell B, thus preventing any longitudinal movement of the cylinder, but permitting it to revolve freely.

Near the middle portion of the cylinder C is the spiral groove *c*, which is formed around it and which returns upon itself, thus forming a cam in the surface of the cylinder. When the cylinder C is inserted in the plunger P, the small screw T (Fig. 3), whose head is completely beneath the surface of the plunger, has its point projecting into the groove or cam *c*, just described.

To operate the saw it is simply necessary to slip the socket A on the end of a dental drill and attach the shank D to the cable by means of the ordinary chuck, the shank being shaped so as to fit the chuck. If now the cable is revolved by means of a motor of any kind, it is evident that the cylinder C will revolve in the plunger P, and the groove or cam *c* will force the screw T to travel forward and backward, carrying the plunger P and the saw X with it, thus giving the latter a reciprocating movement, the rapidity of which can be regulated by the speed of the motor.

The whole arrangement is simple and compact. It can be attached to the handle of the dental drill in a moment, and, if properly made, of good material, it will not get out of order with any ordinary usage, as all springs are avoided, and the operation is positive in every particular.

The superiority of the saw, in nearly all cases, over other devices for the removal of bony growths or bony deformities of the nasal passages, and especially of the nasal septum, has been very clearly and ably shown by Dr. Bosworth.*

Its marked superiority consists in its leaving, if properly manipulated, an even and smooth surface, and therefore no irregularities in which secretions may accumulate and become inspissated, as is often the case after the use of burrs or drills.

There are two advantages possessed by this saw propelled by electric power instead of by the hand. They are the greater accuracy and rapidity with which the operation can be done.

There are two blades attached to this saw—one straight, and one set at an angle, as shown in the cuts.

The object of the angular blade is to throw the body of the saw and the hand below the line of vision, so as not to obstruct the view of the blade while operating.

In using the hand-saw it is difficult to make the to-and-fro movement of the hand so steady and uniform as not to displace the blade of the saw, particularly in starting it; but with this saw, propelled by power, it can be held in the hand firmly and steadily at the exact spot where it is wished to cut, the motor being started and stopped by simply closing and opening the current by means of a push-button placed on the floor and controlled by the foot.

It is seen that each revolution of the motor gives the blade of the saw a backward and forward movement, so that a speed of fifteen hundred or two thousand revolutions gives the blade a corresponding number of strokes. It can be at once seen that a bony projection which will require a considerable period of time to cut through with the hand-saw can with this device be cut through very quickly.

The length of time required in some cases to cut off a hard bony outgrowth with the hand-saw is often an objection to its use, for not unfrequently patients have fainted, not on account of pain, for that can be entirely prevented by the use of cocaine, but on account of the mental association or unpleasant sensations produced by the vibrations of the saw. This is entirely avoided by the rapidity of the action of the electric saw, and the quickness with which the operation can be performed.

It might be feared that this rapidity would endanger the cutting of parts not intended to be cut. This is not to be feared, for the hand of the operator can be so firmly secured or rested against the face or upper jaw of the patient as to give him the greatest security and accuracy in controlling the blade of the saw. Also, the saw can be stopped almost immediately by breaking the current to the motor.

The application of the surgical engine or motive power to nasal surgery is due to Dr. Goodwillie,* and in some operations in the nose his revolving knives, nasal drills, and burrs are superior to any other instrument devised. So are the nasal trephines devised by Dr. Curtis,† and the nasal drills and nasal planes devised by Dr. Jarvis; ‡ but for the removal of redundant bone tissue from the nasal passages, and especially from the septum narium, where the surfaces should be left smooth and straight, a perfectly and rapidly working nasal saw, propelled by a motor easily and quickly controlled, like the electric motor, is *par excellence* the instrument to be employed.#

THE USE OF GALVANISM IN GYNÆCOLOGY.‖

By E. L'H. McGINNIS, M. D.,

ELECTRO-THERAPEUTIST TO THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK; ASSISTANT TO THE CHAIR OF GYNÆCOLOGY IN THE NEW YORK POLYCLINIC; MEMBER OF THE NEW YORK PATHOLOGICAL SOCIETY, ETC.

When I was requested to contribute something on this subject to your many valuable papers, it was with a sense of fear and trembling that I reluctantly acquiesced, for I feel that the subject is one so vast that many of our number could do it justice better than I. On the other hand, I welcome an opportunity to hear your discussions, and were I

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* "Med. Record," New York, January 29, 1887, vol. xxxi p. 115.

* "Extirpation of the Bones of the Nose and Mouth by the Aid of the Surgical Engine." "Med. Record," New York, July 12, 1879, vol. xvi, p. 28.

† "New York Medical Journal," vol. xiv, 1887, p. 596.

‡ "Medical Record," New York, 1887, vol. xxxi, p. 408.

This electric nasal saw has been made for me by Chr. E. A. Gronbech, 205 East Thirty-fourth Street, New York. I use the Challenge motor, which is also made by him. This is run by a Gibson storage battery, which is charged with the Edison current.

‖ Read before the Alumni Association of the Woman's Hospital in the State of New York at its fourth meeting.

to have the benefit of them to record here I might interest you more. But if I can tell you even one fact new to you, and make you as interested in the subject as I have been and am, the few moments of your time allotted to me will perhaps be spent not entirely in vain.

I am well aware that electricity as applied to gynæcological purposes has been rather frowned upon in times past, because many of you have imagined, from the accounts of the marvelous cures due to its application, that anything abnormal in the female pelvis or vicinity would succumb to its influence, and, having tried to make it fulfill your expectations, have failed in accomplishing the desired results, and so you have declared its employment only a waste of time, and have neglected to use your battery where it might have been of much service. My limited experience with it has taught me one important fact—viz., that it will *not* cure every patient on whom it may be tried; but if it will cure many of them, and relieve more, surely we have an important aid to the treatment of obstinate cases where our other resources have been well drawn upon and the results have not been satisfactory.

The tonic effect of electricity is so well proved that it need take but little space; and while a tonic, it is often a sedative, for one patient will be gently stimulated by a certain amount, and another, with the same amount of electricity, will be seen to grow drowsy and sleepy, even on the table. In my clinic at the Woman's Hospital, patients have told me that the nights of my applications were the only ones they could sleep through without the aid of medicines.

No doubt some of us have used it for the relief of disordered menstruation, especially amenorrhœa, in which the tonic effect is so often shown by an increased flux at the menstrual period, and in dysmenorrhœa due to causes other than displacement, when the sedative effect is recognized. I have often seen it give temporary relief from pain when due to morbid growths such as ovarian cysts, uterine fibromata, and the like. A word in regard to the time of application may not come amiss, as much of its success depends upon when it is used. In cases of amenorrhœa I have found that if as many treatments as possible are given during the few days just preceding the time of the expected flow, the amount will be larger, and there will be less pain than if it is given at stated intervals during the month. In regard to dysmenorrhœa, which is looked upon as a symptom, of course the use of galvanism is called for not only when pain is actually present, but also during the intervals. Do not be surprised if one or two treatments fail to give the relief you have read of in the literature on the subject, but I am sure you will be well repaid if you persevere with your treatment and bear in mind that continued repetition is necessary for satisfactory results.

Another class of cases where electricity has given me satisfaction is that in which patients who have undergone abdominal section and recovered from the operation return to us complaining of pain, sometimes constant, occasionally coming and going, and ask us for relief. What shall we do for them? Perhaps the most satisfactory results may be obtained by the use of a mild galvanic current passed through the seat of the pain, one electrode being placed in the vagina, the other externally applied to the abdomen, the latter of which should be a large, flat, sponge- or cotton-covered metal plate. No universal rule as regards the strength of the current can be given, for patients differ very much in their susceptibility. I generally give as much as can be comfortably borne, the amount varying from 30 to 50 milliampères. Care should be taken to avoid the scar, as it is often extremely sensitive. All patients whose cases are of this troublesome character do not stay permanently cured, but those which I have used it upon in this way have been much relieved during their course of treatment, and a number of them have had no return of pain during the year since leaving my hands, and will, let us hope, remain free from a return of troublesome symptoms.

In the treatment of ovarian cysts something has been done by Dr. Paul F. Mundé and others, but the results, while fair, are not encouraging as compared with those of the operation for removal of the growth. I am of the opinion, however, that much good may be done in cases of tumors which are too adherent to be removed with any degree of safety.

Dr. Mundé's experience with ovarian cysts treated by electrolysis shows us that out of fifty-one cases in which he used the above-mentioned treatment, twenty-eight, or about 55 per cent., were cured or permanently improved by it. In thirteen of these cases (or 25·4 per cent.) dangerous results followed, and nine of them (or 17·6 per cent. of the fifty-one) were fatal. But surely where the knife is impracticable and nothing safer can be done, this treatment is worthy of trial.

The crowning triumph of galvanism, however, seems to be in the treatment of uterine fibroma by electrolysis. Many methods of application have been tried, but that of my friend, Dr. Georges Apostoli, of Paris, seems to be in every way the best. The older custom of introducing one or both platinum-pointed needles into the body of the growth itself gave very good results, and a number of patients whom I treated in this manner were much improved. The hæmorrhage was greatly diminished, and in some it was checked entirely as regards an abnormal amount; the pain was very greatly controlled, and the size reduced so much that clothing which was rather tight before the treatment was commenced had to be taken in at the waist once and sometimes twice in a few weeks. The objection of troublesome hæmorrhage following the withdrawal of the needles has been frequently raised, and while I personally have never had any such unpleasant sequel, I am rather of the opinion that it was due to my good luck, although every possible care was exercised. I also was accustomed to introduce the needles without the use of an anæsthetic, but it is hardly to be advised, as the proceeding is generally a very painful one to the patient, especially if a round-pointed needle is used; and the amount of force necessary for its introduction may do some damage, such as carrying it beyond the morbid growth and perforating the uterus.

Dr. Apostoli's method does not cause such anxiety on the part of the attending physician, for there are, as a rule, no needles to be withdrawn, consequently there is no following hæmorrhage, neither is there likelihood of septic trouble. His method of procedure is as follows:

First, an electrode, which is made of platinum and shaped like an ordinary uterine sound, bent to perfectly fit the canal, is introduced and carried well up to the fundus.

He next lays upon the abdomen another electrode consisting of a flat piece of metal (to which the wire is connected) covered by a moist preparation of potter's clay, which is inclosed in a gauze net or bag; this enables it to retain its thick, flat shape, and it can be easily carried about from house to house if necessary. I may remark in passing that the doctor never allows this electrode to become dry, and this he manages by wrapping it in two thicknesses of flexible oil-cloth, such as is sometimes used for a table-covering in kitchens; and so well does it keep it wet that the same electrode which he prepared in Paris, after he had used it in Great Britain and crossed the ocean and used it several times in this country, was found to be in perfect condition for immediate use when I saw him operate in New York. After this has been well pressed and molded to the shape of the abdomen, the current is then *gently* turned on and very gradually increased till the proper strength is reached. The word *proper* needs some explanation here. He says in one of his writings on the subject that the current should be from 60 to 70 milliampères; I have, however, seen him use as high as 250 milliampères, and in all his more recent cases he makes use of the stronger current. This strength is to be maintained from five to fifteen minutes; he used it twelve minutes when I saw him. Then the current is very gradually reduced until none remains, the patient is put to bed and kept quiet for a few hours, and the operation is finished. One thing is specially to be avoided—viz., any interruption of the current during the operation.

This method is quite painless, and is exceedingly simple in its details. It is repeated once or twice weekly, and its benefit is noticed almost at once by the rapid reduction in the size of the mass and in the cessation of hæmorrhage.

In case the uterus is in such a position that it is impossible to pass the electrode to the fundus, needles of platinum are to be inserted into the mass itself, and the strong current is then used as before mentioned. I have heard the question of the likelihood of stenosis of the canal following the operation spoken of, and in reply I learned that out of over one thousand cases treated in this manner but one was followed by this unfortunate accident.

I am glad to mention the growing popularity of this operation both at home and abroad, and very many of our best authorities on the subject are having excellent results by its employment. No less a one than Dr. Keith, Sr., of Edinburgh, who has, perhaps, used it as much as any one now living, says in a recent article that he holds any operator culpably negligent if hysterectomy is performed before a thorough trial of Apostoli's method has been given.

When Dr. Apostoli visited this country last autumn he brought with him a portable battery made by Gaiffe & Sons, of Paris, and through his courtesy I was enabled to purchase it. Thinking it might be of interest to you, I have brought it here, and now take pleasure in showing it to you.

Dr. Frank Martin, of Chicago, who has given much attention to the treatment of uterine fibroma by electrolysis, in a recent article published in the "Medical Record," mentions a new battery which is really a small dynamo-machine, and may be run by steam- or gas-engine, or even electricity, and from his description seems to be a very useful addition to the outfit. Few, however, would care to spare the necessary room for it or bear the expense.

In conclusion, let me urge you to place more dependence upon galvanism in your routine treatment, and, as our knowledge of electro-therapy is increased with time, let us hope that it will rob the surgeon's knife of much of its terror, and enable us to treat obstinate cases with a success never before equaled.

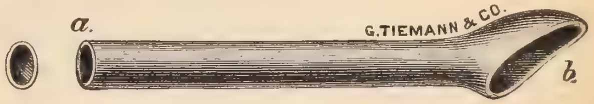
335 Fifth Avenue.

NASAL INTUBATION.*

By D. H. GOODWILLIE, M. D.

On this occasion it is only my purpose to introduce to you a method of nasal intubation as a valuable aid in the treatment of intranasal disease, and at some future time to give more in detail the result of an experience of some years of its use.

My first efforts began by the use of pure rubber-gum tubing of different sizes and strength and made applicable to each case by such impromptu means as I had at command. These experiments, after being carried on for some time, were so encouraging that I had the tubes made in soft rubber and platinum or aluminium from models that have proved by experience to be of practical application. These improved tubes properly made have given me such good results that I merely call your attention to them for your consideration.



These tubes are oval (*a*) in shape and of the same size, with the exception of the anterior end (*b*), that is shaped so as to fit the vestibule of the nostril, and by that they are retained in place.

They are made of different sizes, ¼ to ½ inch in diameter, and in length from 2½ to 3½ inches, but may readily be cut to any desired length.

The metal tubes can be changed in their caliber by passing through them a core of the desired shape. The anterior end may be soft rubber, as it is more comfortable by its flexibility in the vestibule of the nose.

The small rubber tubes are made use of at the beginning of the treatment and changed to larger ones until there is normal space or the deformity has been corrected. Then the metal tubes may be used if so desired, as they allow freer respiration through them. The tube is put into the nostril by raising the end of the nose and gently passing it into the inferior meatus, then releasing the end of the nose and passing the anterior end into the vestibule. They can not be seen externally, and so can be worn and treatment carried on without any unsightly appearance, or even knowledge of their presence.

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* Read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, December 27, 1887.

They can be readily removed by the patient for cleansing and returned to the nostril. Some of my patients have worn them constantly for months without discomfort and always with benefit.

I will simply refer to some of the nasal diseases in which they have been made use of—viz.:

1. Intranasal hæmorrhage.
2. Fractures of the nose, internal and external.
3. Deviations of the cartilaginous and bony septum after the necessary surgical operation of section or removal of exostosis.
4. After the removal of hypertrophic turbinated tissues or polypi, whether by the cautery or snare.
5. Hypertrophies of the soft tissues without an operation, when worn for a sufficient time to produce absorption.

The following two cases will serve to illustrate the good results of the nasal tubes. I will not occupy your time by going into details. These patients have kindly consented to be present for your examination:

The Rev. F. R., from a blow upon the nose by a base-ball in his youth, had as a consequence a deviation of the cartilaginous and bony septum, with an exostosis into and along the line of the left inferior meatus for nearly two thirds of its length. There was little or no respiration through the nostril. As it affected his voice in speaking, he sought relief. On October 10, 1887, the exostosis was removed by the revolving trephine, knife, and electro-motor. On November 22, 1887, a soft rubber tube was introduced into the left nostril, and was kept in constantly day and night for a month, during which time he did his public speaking. This was replaced by the larger one he now wears. He has removed it four or five times a day for cleansing both it and the nostril, and then replaced it. You can now see by his removal of this tube that he has abundant passage for air and mucus by the straightening up of the septum. The tube will be kept in until the parts are healed and contraction has been complete.

Dr. J. S. A., when a youth, received a blow upon the nose that displaced the septum and produced an exostosis through its whole length in the line of the left inferior meatus. He had little respiration through the nostril, a fœtid discharge, follicular pharyngitis, and ear trouble. After preliminary antiseptic treatment, the exostosis was removed on October 13, 1887, with the revolving trephine and knife. The nasal tube was introduced on the 26th inst. The length of the exostosis, being more than two inches, exposed considerable bone surface, and, along with considerable hypertrophy of the inferior turbinated, it has steadily and slowly improved, and only requires time to heal and contract in order to give him a good result.

Iodine Trichloride.—According to the "Lancet," this compound is freely soluble in water; it is a stronger germicide than carbolic acid, and approaches to corrosive sublimate, but is not nearly so poisonous. Langenbuch recommends an aqueous solution of 1 part in 1,000 or 1,500 for disinfection of the hands, wounds, and instruments; the slight discoloration can be easily removed from the hands by means of ammonia. He recommends a solution of 1 part in 1,200 as an injection for gonorrhœa, or as an internal remedy in dyspepsia due to bacteria, the dose to be a teaspoonful every two hours.

A CASE OF SPASMODIC ASTHMA DUE TO ANEURYSM.

By J. W. LORD, M. D., and PEARCE KINTZING, M. D.,
RESIDENT PHYSICIANS TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

An interesting case of asthma, due to an unusual cause and presenting peculiar obscurities, which resulted in failure to detect the primary affection, came under notice recently.

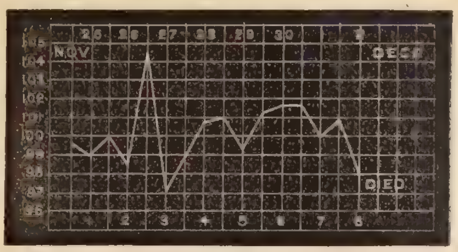
John C., colored, aged forty-nine, applied for admission into the house November 25th. He had been a hod-carrier, and had suffered with irregular asthmatic attacks for the last three years, which were at first only noticeable after climbing ladders with heavy loads. He was then attacked with spells of dyspnœa and coughing, soon expectoration of a thin serous liquid followed, and expectoration gave more or less relief. The spells of dyspnœa increased in number, the cough became more constant, expectoration steadily increased, and finally his voice became somewhat husky, and the patient also noticed that various changes of position gave him relief, and that copious expectoration was always followed by amelioration of the dyspnœa. He stated that he had been unable to work for nearly six weeks.

On admission, shortness of breath was very marked, the respirations were forty in a minute, and inspiration was accompanied by a peculiar gasp. Harsh rhonchi of a mixed character could be heard at some distance from the patient. His voice was husky. He complained of no pain.

Examination showed the chest markedly increased in its antero-posterior diameter. The lungs were intensely emphysematous, and neither the area of cardiac dullness nor the apex-beat was discoverable. Râles, liquid in character and shifting in position, were heard at all points. He was unable to hold his breath for more than a few seconds. The heart-sounds were obscure, but a faint murmur at the midsternum opposite the fourth cartilage, systolic in time, could be heard, but was not transmitted in any direction. There was no bruit in the carotids nor along the descending aorta. There was no difference in the radial pulses. The pupils showed no inequality, and responded to light. Dysphagia was not very marked, and, as the patient was on liquid diet, particular attention was not drawn to it. There had been no marked wasting. Expectoration was now very profuse, and amounted to over a pint a day. Perspiration was profuse and constant.

The patient was treated for spasmodic asthma. Morphine by the mouth in quarter-grain doses gave relief. Oil of eucalyptus relieved one spell promptly. Hot mustard foot-baths and turpentine stupes to the chest pushed to vesication also gave favorable results. Extract of belladonna acted well, but increasing frequency and severity of the asthmatic paroxysms rendered the resort to other measures necessary. Fluid extract of quebracho caused intense spasm, and was withdrawn after trial. One paroxysm was so severe that etherization was resorted to. The pulse was weak, and ranged from 112 to 130. Digitalis was carefully given, and a marked improvement noted. The temperature range was a peculiar feature, and is appended. It is to be noted that the rise or fall of temperature had no influence on the dyspnœa, nor could any cause for the temperature range be found, either before or after death, which occurred from asphyxia on the eighth day.

The post-mortem revealed an enlarged heart, with marked hypertrophy of the left ventricle. The heart was bent upon its axis at the origin of the aorta, and the apex pushed to the left, being in the sixth interspace. The long axis of the heart was at an exact right angle to the sternum. The aortic valve was on the same level as the apex. The aortic and pulmonary valves were fenestrated, but no retraction nor thickening of either these or of the mitral was present. The aorta was dilated, and atheromatous plates were plentiful, some being calcareous. Three large sacculations were found just above the valves. The pulmonary artery was constricted and wedged out of sight between the aorta and the base of the left ventricle. The angular bend in the aorta accounted for the murmur heard at the fourth cartilage. A large, irregular intrapericardial aneurysm of the dissecting variety was found, involving the transverse and descending portions of the arch. It completely surrounded the trachea and œsophagus, pushing them to the right. Both were pressed upon and the trachea was nearly occluded. Posteriorly the sac of the aneurysm was attached to the sides of the bodies of the second, third, fourth, and fifth thoracic vertebræ, and had eroded the bodies extensively. The intervertebral discs were intact. The sac was entirely filled with laminated clot. The pericardium was tightly bound to the sac of the aneurysm. The pneumogastric nerve was pressed between the pericardium and the sac. From the lower border of the heart to the apex of the arch measured eight inches and a half, and the pericardium was thickened, stretched, and closely incorporated with the sac. The pulmonary veins were pressed upon, thus causing the serous exudate into the vesicles. The lungs presented the usual characteristics of emphysema.



Correspondence.

LETTER FROM PARIS.

Cephalic Version by External Manipulation.—The Spectroscopic Study of the Reduction of Oxyhæmoglobin.—A Physician's Duty to his Patient and to the Public.—A Doctor classed as a Commercial Traveler.—Antipyrine in Obstetrics.

PARIS, *January 20, 1888.*

PROFESSOR BUDIN now has charge of the Faculty of Medicine's *Clinique d'Accouchements*, where he delivers the obstetrical clinical lectures in place of M. Pajot (retired). A late writer, speaking of the study of obstetrics in America, says: "It is a pity that you have no special hospitals for women in confinement, as they have in France." In the fine building devoted by the faculty to this purpose in Paris, where they have several births a day, Dr. Budin has been able to inaugurate a new system of study for Paris students, which enables them actually to superintend a confinement as they will have to in private practice. In their turn, two students are called, at any hour of the day or night, to come to the hospital and take charge of a patient. One of the students acts as the principal, and the second one assists, taking his turn as chief on the next occasion. A complete history of the case is written out by the students, describing the labor in all its phases, and this is read to the professor when he comes for his morning visit. He then questions the students on the interesting points in the case, and sometimes uses it in the clinical lectures, which he delivers twice a week. Among the interesting cases that took place lately at the *Clinique* was one in which M. Loviot, the *chef de Clinique*, did cephalic version. The child presented by the breech in the left oblique anterior diameter. The manner in which the version was performed is the curious part of the case. It was by external manipulation. The woman was a primipara, twenty-two years of age. Chloroform was given, and she was placed in the usual obstetric position, when M. Loviot introduced his left hand into the vagina and made an attempt to push the breech upward and forward. Notwithstanding the fact that the breech was already engaged, this was easily performed. With the right hand the operator then felt the breech about the level of the superior strait, in front; seizing it, he began to push it by little blows upon it toward the left side of the mother. Withdrawing the other hand now from the vagina, he felt for the head, and, confiding the breech to an assistant, who continued to push it up and to the left, M. Loviot pressed the head down and to the right, until it arrived at the superior strait. Once in position, it was kept there by a bandage, and five days afterward the membranes broke and labor began. The uterine contractions not being sufficient, the case was terminated with the forceps.

Cephalic version by external manipulation had been discussed lately here by the *Société obstétricale*, and its members had come to the conclusion that it was useless, if not dangerous; but, if conclusions can be drawn from this case, it would seem that, even when the breech is engaged, it is possible to perform cephalic version. The fixity of the part engaged may not be definitive, and, owing to the relaxation of the muscles obtained by giving chloroform, the hand can be introduced into the vagina and the presenting part pushed upward. M. Loviot professes to be the first who has performed the operation of changing a breech presentation when the breech was already engaged before labor and with chloroform.

The application of spectroscopy to the study of pathological alterations in the blood is still quite new, and from its importance deserves more mention than I can give to it in a letter, but I must mention some facts in regard to it. So far the considerable expense of the large instruments employed has to a great extent prevented any use being made in medicine of the principal characteristics of the coloring matter of the blood, either in the normal or in the pathological state, but a late invention of Dr. Hénocque's places in the hands of the medical profession a handy, portable hæmato-spectroscope that will almost go into a waistcoat pocket, and with which a spectral analysis, both qualitative and quantitative, of hæmoglobin and its derivatives (oxyhæmoglobin, methæmoglobin, etc.) can be made at the bedside. But it will be asked, What is the advantage of knowing this? Well, it has been proved to be of the utmost importance in the study of the variations of the activity of the reduction of oxyhæmoglobin in health and in disease. This Dr. Hénocque makes us *see* with his instrument applied to the thumb. A small elastic-band ligature is tied around the lower part of the thumb, and, on the hæmatoscope being applied to the nail, which is exposed to the usual daylight (as strong as possible, but that from a house window is enough), the energy of the exchange going on between oxygen and the tissues can be seen. This new idea is of great practical importance in the study of the phenomena of nutrition, both in physiological and in pathological states, so that such physicians as Professor Germain Sée are now taking the matter up and applying it to the study of many pathological states, such as anæmia, etc. Dr. Hénocque is one of Professor Brown-Séquard's best men. He has given the results of some 370 cases in which experiments were made.

Professor Brouardel is reporting some interesting cases in legal medicine to the *Société de médecine légale.* A late one refers to a doctor who is attached to a large railroad company, and was called in by one of the men who were employed in starting trains, having indeed complete charge of a small railway station. The doctor found the patient indisposed, and on questioning him saw that he had suffered from vertigo and that he had fallen twice insensible, for a moment or two. In view of the fact that the man often had to turn a switch for trains containing hundreds of travelers, who might be in danger from this man, he asked if he ought to overlook professional secrecy and inform the company. Dr. Brouardel answered that it would be best to tell the patient that, if any accident happened, the doctor could not take it upon himself to excuse him, on account of his illness, and that he would have to betray his professional secret in his case. It so happened that the man saw that it was dangerous to go on, and he consented to apply for an inside office place under the company, which allowed him to make a living without danger to others; but at the same time it is a delicate question for a physician to decide, whether he ought to betray a patient for the good of the public.

Another case of professional interest was decided by the Paris tribunals lately. A doctor had agreed with a druggist to write articles recommending a certain chemical product manufactured by the druggist, and also to deliver lectures in regard to the product, recommending it in fact by all possible means to his professional brethren and the public. In consideration of these services the druggist agreed to pay the doctor 4,000 francs a year and certain expenses. Afterward the doctor refused to continue the work for the druggist, who at once sued him. The doctor's lawyer maintained that he could not be compelled to carry out such a contract, as he was not a man of business. The tribunal, however, decided that, as the doctor had agreed to do work such as an ordinary commercial traveler did, he was responsible. It was added that a physician should only advise any preparation which he knew to be useful in the ordinary way of giving advice at his office or at a patient's house, and not by advertisements; and that he should not receive any payment for such advice, beyond his usual professional fees, under pain of being ranged with the regular mercantile traveler. This would not be a bad judgment on those who recommend certain preparations, for a consideration, in other countries!

Antipyrine is all the rage, and it is being recommended for all sorts and kinds of troubles. At the last meeting of the Academy of Medicine, M. Ossian Bonnet said that it would cure seasickness, in amounts varying from thirty to ninety grains a day, or in doses of eight grains by subcutaneous injection. Another says it will cure chorea. Its use in obstetrics is increasing rapidly. It seems to have great power over the painful contractions of the uterus in abortion, and in other painful hæmorrhagic states. Abortion has been prevented by giving a large dose of antipyrine by rectal injection. M. Laget, of Marseilles, relates a case of premature birth in which during the period of expulsion the pain was so excessive that the uterus seemed to be paralyzed, which is often seen in certain cases of uterine inertia. Two doses of antipyrine, of thirty grains each, brought about a cessation of the intense pain, without interfering with the uterine contractions, which indeed seemed to be regulated in their power by the medicine. It was given by the stomach, as the head, being down on the perinæum, might have interfered with the rectal injection; but subcutaneous injection could be tried in such cases.

THE

NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by D. Appleton & Co.

Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 4, 1888.

MEDICAL MEN IN POLITICS.

A recent number of the "Lancet" contains an editorial article in which some wholesome advice is given to the medical profession, the point of which is that its members ought to lay aside their professional character—"be distinctly 'off duty' and out of uniform"—when they take part in politics. But the article seems to have been inspired by the writer's dread that medical men may commit the blunder of forcing their political views upon the public at an unfair advantage. "It can not be gainsaid," says the article, "that the practitioner of medicine has manifold opportunities of exercising 'undue influence' in politics. Nothing but the surpassingly good and strong sense of the community could resist the influence of the medical profession if it seriously laid itself out to direct or control public policy. This may appear to be a sweeping assertion, and undoubtedly it will be regarded as a startling one, but we have no hesitation in making it. Socially, there can not be any question that, for good or evil, medical men have an influence which, if they chose to use it, would be irresistible, and compared with which the influence of the priests of the middle ages was mere child's play. However amenable men may be to the terrors of a future life, the health experiences of the present and the dread of dying are such formidable factors in the production of the mental state and opinions, that, even if there were nothing other than these considerations—and there is much, as every practitioner knows—there would be more than enough to give the men who practically hold the talisman of health in life transcendent authority and influence."

It is impossible to misconstrue such language; it seems meant to be taken literally. So taken, either it rests upon no better foundation than dreams, or else it indicates that the British people are of a character far different from that with which they have been credited for centuries—always, in fact—and that they have a tendency to servitude which must turn to irony the old refrain "Britons never, never shall be slaves!" In view of their history, such an inference is out of the question; moreover, it runs counter to pronounced national characteristics that the whole world has constantly before its eyes. We are convinced, therefore, that the "Lancet" has conjured up an imaginary danger. We believe that the influence of medical men with the community is quite as great in the United States as anywhere else, but everybody in the profession here knows that, if it were to organize itself for political purposes, it would not only accomplish nothing, but would make itself ridiculous. Besides, even granting that "undue influence" might be exerted to the degree imagined by the "Lancet," if the two contending political parties counted each its respective proportion of adherents among medical men, the profession would be divided against itself and consequently powerless for good or evil. The truth is, the medical profession has no political influence in the matter of party measures, and it never will have any; it seeks it not, and it never has sought it. Fortunately, however, it has a power in matters concerning which it is specially enlightened, and that power is and will always justly remain proportionate to its worthiness and its earnestness. Moreover, while they can not sway men's minds on party questions, medical men belong, we are proud to be able to say, very generally to the class of citizens who despise the control of party organizations, and are ever ready to vote, and do their best to get others to vote, for men and measures strictly on their merits, without reference to "the machine."

THE CONNECTICUT MEDICAL SOCIETY.

The "Proceedings" at the ninety-sixth annual convention of this society have lately been issued in the shape of an octavo of somewhat more than two hundred pages, prepared under the careful editorship of the secretary, Dr. St. John, of Hartford. The formal papers are entitled "The Treatment of Diseases of the Ear by the General Practitioner," by Dr. A. E. Abrams, of Hartford; "Climacteric Glycosuria," by Dr. George R. Shepherd, of Hartford; "The Relations between Scrofula and Tubercle," by Dr. J. B. Kent, of Putnam; "New Remedies," by Dr. Thomas H. Russell, of New Haven; "Is Smoking Injurious?" by Dr. A. E. Adams, of Danbury; "The Alcoholic Question Medically Considered," by Dr. T. D. Crothers, of Hartford; "Neurectomy of the Trifacial Nerve," by Dr. M. Storrs, of Hartford; "The Adirondacks, a Resort for Health and Recreation," by Dr. William S. Todd, of Ridgefield; "On Erosions of the Cervix Uteri, their Pathology and Treatment" (read by invitation), by Dr. E. W. Cushing, of Boston; "A Medico-legal Study of our Charter and By-laws, with Reasons why they should be Revised," by Dr. Stephen G. Hubbard, of New Haven; and "Natural and Assisted Labors, with Special Reference to the Use of the Forceps," by Dr. R. M. Griswold, of Manchester. Several of these papers were read before local societies; they are all of considerable interest and value. Dr. Adams, who says a good word for tobacco, furnishes us with a suggestive and ingenious article. He upholds the view that little if any of the injurious effect of excessive smoking is due to nicotine. Moderate smoking, he thinks, "acts as a sedative and equalizer of the temper, assists digestion, and is a medium of sociability among men which should not be discarded." Incidentally he cites facts that run somewhat counter to the prevailing outcry against cigarettes. Dr. Cushing's paper is illustrated with several very satisfactory photographic views representing both gross and microscopical appearances. The author thinks that in cases of eversion from laceration of the cervix uteri the everted mucous membrane becomes diseased—not merely exposed—probably from irritation due to some form of bacterial growth.

It seems that the chairman of the Committee on Matters of Professional Interest in the State changed his abode to Pennsylvania during the year, leaving his duties on the committee unattended to. With commendable spirit, however, the remaining members of the committee, Dr. A. W. Nelson and Dr. E. K. Root, declining to be "considered exanimous," prepared a report, in which, after giving concise accounts of certain matters relating to remuneration for medical services and to illegitimate practice, accompanied by unusually sensible comments, they presented a draft of a proposed law to regulate the practice of medicine. It provides that each of the three incorporated State societies, regular, homœopathic, and eclectic, shall annually appoint three of its members to serve as a board of examiners having the power to license physicians and midwives; also for the punishment of midwives who fail to call in a physician or a coroner in cases of death. The draft has the rare merit of brevity.

The society is to be congratulated on the excellence shown by this part of the third volume of its new series of "Proceedings."

MINOR PARAGRAPHS.

A NEW ATLAS OF VENEREAL AND SKIN DISEASES.

As we have often stated, American physicians have contributed very creditably to the advance in dermatology that has taken place within the past quarter of a century. Not the least important of their contributions have been graphic clinical descriptions and telling pictorial delineations. These are precisely the features needed in any atlas illustrating a department of medicine. We were glad, therefore, to meet with the announcement some time ago that the preparation of such a work, to be issued by Messrs. Lea Brothers & Co., of Philadelphia, was in the hands of Dr. Robert W. Taylor, of New York, all of whose writings have been conspicuously marked by vividness and accuracy. We have lately had the opportunity of examining impressions of a great part of the plates and cuts to be given in Dr. Taylor's new atlas, together with the system of its arrangement. Besides the beauty and fidelity of the illustrations, they have the great merit of portraying typical and instructive rather than startling appearances, and especially of representing not only the acme but the various phases of the disease to which they pertain. Having those objects in view, whoever sets to work to produce an atlas of cutaneous and venereal diseases finds his greatest difficulty to lie in the work of selection, and the greater are his attainments as a clinician the more readily will he surmount it. Dr. Taylor's well-known excellence in this respect might well have been taken as sufficient guarantee of the quality of his new work, and our inspection of the plates and letter-press has been only confirmatory. The work will be a most valuable guide in diagnosis and treatment, and we have no doubt that it will shed new luster on American medicine.

THE NEW YORK CLINICAL SOCIETY.

The one hundredth meeting of this society was held on Friday evening, January 27th, at the house of one of its members, Dr. L. Emmett Holt. It was fitting that on such an occasion a formal discussion should be announced, to be taken part in by a few invited guests. The subject was the operation of shortening the round ligaments of the uterus. Of late, the society has given abundant evidence of its growing usefulness, and we congratulate it on its status at the time of its hundredth meeting.

THE NEW YORK POLYCLINIC.

A very enjoyable entertainment was given by the faculty of the Polyclinic last Saturday evening, at the building in Thirty-fourth Street. The teaching corps received their friends and those of the gentlemen in attendance on the courses quite informally, but in the most social spirit. We learn that such informal receptions are to be given regularly at short intervals. The idea is very creditable; there should be other ties between instructor and pupil than those nurtured in the clinic and the laboratory; they conduce to an *esprit de corps* which it is highly desirable to maintain in the profession.

THE CITY BOARD OF HEALTH.

We are glad to be able to say that the gratification expressed by the Mayor, Mr. Hewitt, in his response to a toast at the recent dinner of the Alumni Association of the Medical Department of the University of the City of New York, at the improvement that has taken place in the composition of the Board of Health Commissioners during his mayoralty, and in the administration of the city's sanitary affairs, seems to us decidedly well founded. We are satisfied that the present board is doing far better work than any of its predecessors for a number of years past.

THE DEATH OF PROFESSOR ASA GRAY.

By the recent death of the botanist of Harvard the little knot of American workers in the field of the natural sciences has sustained a loss comparable to that entailed by the death of the late Professor Baird, and the profession of medicine shares in the loss to about an equal extent. Both these eminent men were educated as physicians, and, although they each entered upon a career quite different from the practice of medicine, medical science has indirectly profited much by their labors, and certainly will not hesitate to claim them as its own.

THE IMPONDERABLE MATERIA MEDICA.

That lively sermonizer, the Rev. Heber Newton, lately discoursed from the pulpit nominally on the "mind cure," but really on a wide range of psychical agencies credited with influencing the bodily state. The greater part of his "sermon" was somewhat discursive, although sparkling, but he closed with some exceedingly wholesome advice—to the believers in such agencies, that they should avoid trying to found a sect on the basis of facts long ago recognized, that they should not insist that their truth was the whole truth, and that they should cut loose from the quacks who were gathering round them like camp-followers seeking only for the booty of success; and to medical men, that they should make use of whatever truth they might find beyond the material subject-matter of scientific study, rather than ignore it to its own undue elevation. "Let them," he said, "absorb what is good in this heresy, and thus they will best refute it. Let them enter in their pharmacopœia the tonics of thought and feeling. Let them administer mental and moral stimulants scientifically, as those who really believe that an idea may be the most potent of drugs." Of course, as the Rev. Mr. Newton doubtless knows, all this is striven after by every physician who is at all above pills and powders, and not seldom practiced with the most striking results.

HOSPITAL ACCIDENTS.

It speaks well for the discipline maintained in the Hospital for the Ruptured and Crippled that on the occasion of a fire that occurred there last Sunday night only one life was lost, and that not a patient's. More melancholy, if the newspaper account is true, was the casualty by which a patient was precipitated into the cellar of the Roosevelt Hospital through the elevator well a few days ago, for such an occurrence ought not to be possible. According to the account in question, the patient had just undergone an operation, and while yet on the wheeled stretcher, not having emerged from the anæsthesia, was trundled into the well by an orderly, who supposed that the platform of the elevator was at the theatre landing. The patient, a young man, is said to have died a few hours after the accident.

THE MEDICAL CORPS OF THE NAVY.

It is to be hoped that the line officers of the navy are not quite so ill advised as to be following a course attributed to them by the newspapers—that of offering organized opposition to a bill increasing the pay of certain officers of the medical corps, while at the same time seeking an advance in their own pay and the passage of the "thirty years' retirement bill." As we have often remarked, the naval service is none too attractive to medical men as things are now. If the line officers are in any measure successful in preventing a just increase in the compensation of their fellow-officers of the medical staff, they will have only themselves to blame when the time comes—and come it must at no distant day—that they find their lives and health in the hands of an inferior class of medical men.

THE "BROOKLYN MEDICAL JOURNAL."

Some weeks ago we mentioned the announcement of this new monthly journal. The first number, dated January, 1888, has now reached us. As we expected, it presents a handsome appearance, and contains a number of valuable articles. In the opening editorial article the editors expound its *raison d'être* most cogently. We wish the new journal success.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 31, 1888:

DISEASES.	Week ending Jan. 24.		Week ending Jan. 31.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	12	2	10	2
Scarlet fever	125	25	131	20
Cerebro-spinal meningitis	3	2	2	2
Measles	52	11	36	7
Diphtheria	170	54	136	52
Small-pox	5	3	1	0

The Health of New York City.—During the five weeks ending Tuesday, January 31st, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 44 cases and 15 deaths; scarlet fever, 700 cases and 109 deaths; cerebro-spinal meningitis, 11 cases and 7 deaths; measles, 200 cases and 32 deaths; diphtheria, 826 cases and 282 deaths; small-pox, 16 cases and 3 deaths.

The Kings County Medical Association.—The anniversary address of the president, Dr. Edward R. Squibb, will be read at the February meeting, to be held on Tuesday, the 7th inst. Its title is "Some Account of the Materia Medica in 1887."

The late Dr. Wesley M. Carpenter.—At a meeting of the New York Pathological Society held January 25, 1888, in executive session, the committee appointed to draw resolutions up upon the death of the late secretary, Dr. Wesley M. Carpenter, presented the following, which was unanimously approved of and accepted:

"*Whereas*, It has pleased an overruling Providence to remove suddenly our honored and almost peerless secretary, Dr. Wesley M. Carpenter, therefore be it

"*Resolved*, That this society has lost in him not only one of its most honored and gifted members, but a great and admirable medical scribe, whose long, conscientious, and skilled services in its behalf have been largely and gratefully appreciated, not only by the members, but by readers of its 'Transactions' everywhere.

"*Resolved*, That his faithfulness and rare excellence in the performance of his responsible duties have been, and ever shall be, examples worthy of emulation by his sorrowing survivors. He taught emphatically that the best incentives for good work are a high sense of honor and a pure love of science.

"*Resolved*, That in the death of Dr. Carpenter the members of this society have lost a personal director and friend whose watchful care, sound judgment, and facile pen were ever ready in their behalf, and whose strict fairness and unusual correctness in reporting and guiding the proceedings of this body were never questioned.

"*Resolved*, That, while working modestly, earnestly, and successfully for the best interests of this society, he was unconsciously, but surely, making for himself an enduring reputation as an accurate, accomplished, and classical medical man and writer. He not only spoke through and for others with a terseness and force which made his reports models of their kind, but often for himself with an originality and perspicuity which added greatly to the value of our records.

"*Resolved*, That we also tender to his household and kindred our sincere sympathy for the loss of one who was taken from them and from us in the fullest tide of his extended usefulness, and join sorrowfully, though scarcely yet resignedly, with them in forced submission to the inevitable decree which comes sooner or later to all of us, but which came seemingly too early to him."

[Signed] George F. Shrady, M. D.,
John C. Peters, M. D.,
John H. Hinton, M. D., } *Committee.*
Walter Mendelson, M. D., *Secretary.*

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 22 to January 28, 1888:*

Burton, H. G., Captain and Assistant Surgeon. Granted leave of absence for one year on surgeon's certificate of disability, to take effect when able to travel. S. O. 19, A. G. O., January 24, 1888.

Fisher, W. W. R., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, on surgeon's certificate of disability. S. O. 4, Department of California, January 20, 1888.

Society Meetings for the Coming Week:

Monday, *February 6th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *February 7th:* Medical Society of the State of New York (first day—Albany); Kings County, N. Y., Medical Association; New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Hampden, Mass., District Medical Society; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston).

Wednesday, *February 8th:* Medical Society of the State of New York (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Pittsfield, Mass., Medical Association (private); Franklin, Mass., District Medical Society (quarterly—Greenfield); Philadelphia County Medical Society (conversational).

Thursday, *February 9th:* Medical Society of the State of New York (third day); Society of Medical Jurisprudence and State Medicine; New York Laryngological Society; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *February 10th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *February 11th:* Obstetrical Society of Boston (private); St. Louis Medical Society.

OBITUARY NOTES.

Francis H. Terrill, M. D., of San Francisco, died in that city on January 20th, at the age of thirty-four years. The deceased was a native of Virginia, and obtained his education in the University of Virginia. He served for a number of years in the medical corps of the navy. Four years ago he entered into practice in San Francisco, where he soon became exceedingly popular and successful. It is said that he did not believe in the necessity of revaccination, and it is painful to reflect that this disbelief led to his early death, for he died of smallpox.

George A. Crosby, M. D., of Manchester, N. H., died on Tuesday, January 31st, at the age of fifty-six. He was graduated from Dartmouth Medical College in 1852, and in his early professional life he practiced in South America. During the civil war he served as a surgeon in the volunteer army. He was a member, and at one time president, of the New Hampshire State Medical Society.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of January 11, 1888.

(*Continued from page 105.*)

The Treatment of Nervous and Mental Disease by Systematized Active Exercises.—Dr. Charles K. Mills read the following paper:

Exercises or movements for medical purposes—medical gymnastics, in other words—have been divided and subdivided to an absurd degree by Ling and his followers. Schreiber gives an example of a German term for what is called the quaternary combination of the standing position, which term contains forty-five letters and nine different words, although it is written in German as a single word. The division, however, into such movements or exercises as passive, duplicated active, and active, is rational and useful. Passive movements are performed upon the patient or individual, his will not coming into play except in submitting. In duplicated active movements, both the operator and the individual treated take part, the first resisting while the second acts, or the reverse. Sometimes these movements are spoken of as semi-active and semi-passive; in the former, the physician or operator resists; in the latter, the subject resists. Movements of this class are of the greatest value in some forms of nervous or neuro-muscular disease, but it is not my purpose to discuss them, unless it be incidentally in this paper; nor do I intend, except perhaps in the same manner, to speak of massage.

It is of systematized active exercises that I shall more particularly speak. The expression single active movement indicates that the movement is performed by a single individual without direct assistance, although it may be done under the orders of a physician or master. Exercise of this kind may be performed either with or without apparatus, and even when the latter is used it need not necessarily be expensive. While massage and electricity have received a large share of attention from neurologists, they have neglected too much the use of medical gymnastics, particularly systematized active exercises. Masseurs and masseuses, good, bad, and indifferent, now abound in our large cities, but good instructors in physical culture as applied to medical purposes are not numerous.

"Gymnastics," "exercises," and "movements," by some medical writers are used as practically synonymous. Dr. George H. Taylor, however, maintains that we should carefully distinguish between gymnastics and movements, and between calisthenics and movements, and that evil has grown out of confounding these terms. It is probably better in a medical paper to speak with precision of "movements" or "exercises," designating the particular kind, but "medical gymnastics" covers the whole ground, and the word "gymastic," or "gymnastics," used in a general sense, may be properly employed in medicine.

I will not give much space to a discussion of literature, but will refer briefly to a few important publications, including those which I have chiefly consulted in the preparation of this paper. The attention of the profession of this country has been too little attracted to the publications and the practical work of the brothers Dr. George H. Taylor and Dr. Charles Fayette Taylor, of New York, who may be regarded as the pioneers in this country of the gymnastic treatment of disease. They deserve great credit for their efforts, not wholly appreciated. As early as 1861 a book was issued on "The Theory and Practice of the Movement Cure," by Charles Fayette Taylor, M. D., in which is discussed in an interesting and practical way the treatment by Swedish movements of curvatures, paralysis, indigestion, constipation, diseases of women, etc. In 1879 appeared a treatise entitled "An Exposition of the Swedish Movement Cure," etc., by George H. Taylor, A. M., M. D. Dr. Benjamin Lee, of Philadelphia, by his practical labors and his publications on massage and Swedish movements, has done much to advance the cause of mechano-therapy in America, and stands with the Taylors as a pioneer in this department.

Archibald Maclaren's "System of Physical Education, Theoretical and Practical," is an invaluable book, and while not intended for medical purposes should be studied by every physician interested in active exercises as a means of treatment. Blaikie says truly of Maclaren that he has done more than any one else now living to point out the benefits resulting from rational physical exercise, and how to attain these benefits. By his individual efforts and his publications, William Blaikie himself has also done a great work for the advancement of physical culture. His book, published by Harper & Bros. in 1883, and entitled "How to get Strong, and How to stay so," has enlisted the interest of thousands, and doubtless has lengthened or saved many a life. In 1886 appeared another little work by Blaikie, in the form of a school text-book, "Sound Bodies for our Boys and Girls." The exercises given in this book are clear and plain; they are arranged on a natural plan; they are safe, and but little apparatus is required for them—a few dumb-bells, a few wands or sticks, and a horizontal bar, are about all. I have found them to be admirably suited for my purpose in the treatment of some forms of nervous and mental disease.

In the "Therapeutic Gazette" for June and July, 1887, appeared two lectures by Professor Dujardin-Beaumetz, of Paris, in the first of which he considers the physiological effects obtained from exercise and movements; and in the second, after setting forth the methods of medical gymnastics, he discusses the diseases and condition in which they are useful.

"A Manual of Treatment by Massage and Methodical Muscle Exercise," by Joseph Schreiber, M. D., of Austria, translated, with the author's permission, by Walter Mendelson, M. D., of New York, has appeared within a few months. This book treats the subject of mechano-therapy from various points of view; and in it are found explicit directions in regard to the technique of massage and its effects, and also a discussion of active movements with and without apparatus. The treatment of many nervous diseases is discussed. The book is a valuable practical treatise, and its publication will do much to advance mechano-therapy in this country; but one of my chief reasons for referring to it is because it contains an extensive chronological bibliography, which can be consulted by those interested.

I am engaged in the preparation of a book on the "Gymnastic Treatment of Nervous and Mental Diseases," in which will be considered both general and local methods of exercise, and the combination of such methods with other forms of treatment, as, for instance, with massage, electricity, hydrotherapy, and medicines.

One of my chief purposes this evening is to call attention to general systematized active exercise. I shall also speak of a few special or local exercises designed for particular organs or parts. In a large number of nervous or mental cases the improvement of the general nutrition is the one thing needed to bring about relief or cure, and one of the most effective aids to this end is general, systematized active exercise. The methods chiefly adopted by me are (1) the exercises of Blaikie, with or without dumb-bells, and with the horizontal and parallel bars or substitutes for them; and (2) exercises with pulley-weight apparatus. I need only refer you to Mr. Blaikie's* best-known book for a description of some of the simplest forms of apparatus; to the uses which can be made of the jambs of a door and a couple of pitchfork handles, and for the sketch of a pair of pulley-weights of excellent pattern designed by Dr. Sargent. A. J. Reach & Co., of Philadelphia, the well-known dealers in sporting and gymnastic goods, have constructed a form of pulley-weight apparatus which is very complete, compact, and convenient. "The Home Exerciser" of C. L. Dowd, of New York, is also convenient and useful, and has been strongly indorsed by Mr. Blaikie for its compactness, strength, lightness, etc. The apparatuses of Reach and Dowd consist of an arrangement of ropes, pulleys, and weights, ingeniously put together so as to occupy but little room, and yet to allow the performance of many movements. "The Home Gymnasium" of John E. Ruebsam, of Washington, is well adapted for the office of a physician, or for hospitals and colleges. For a long time I have had this apparatus in use. It occupies more room than that of Reach or that of Dowd, but, on the other hand, it is in some respects more complete, having, for instance, combined with it a lounge for massage purposes, and a strong horizontal bar. An apparatus of this kind, or one similar, should be in every hospital which has not a complete gymnasium.

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* "How to get Strong," etc.

Elastic straps are sometimes used for gymnastic purposes. According to Dujardin-Beaumetz, Pichery was the originator of this system, which he has styled "opposition gymnastics." Elastic cords with handles attached are firmly fastened in convenient places. By making tractions in different directions they will bring out almost any muscular action. They can be adapted for the leg or foot movements as well as to the upper extremities. Some objections, however, apply to them which are not applicable to the pulley-weight apparatus, or to the use of dumb-bells, bar-bells, etc. The force used can not be thoroughly controlled and regulated. Blaikie,* in describing and criticising one of the forms of parlor rowing apparatus, has pointed out their defects and shortcomings better than can be done by myself. In spite of their defects, however, he considers them excellent contrivances if used intelligently.

Movement apparatus run by steam has been largely resorted to in some countries, particularly in Sweden, where the method was invented and introduced by Zander. In this country it has been used in a few institutions, as at the Surgical Institute, formerly located at Broad and Arch Streets, in Philadelphia, where I have observed its workings. The system has a field of usefulness; it has also certain disadvantages, and needs the most careful supervision, but under the strictest supervision it may be used with great benefit. To some extent semi-active and semi-passive or duplicated active movements may be carried out by this machinery, and it can be made to cover the whole range of passive exercises.

The same cautions and contra-indications are to be borne in mind in using the exercises either with or without apparatus; probably the dangers of overdoing are to some extent greater with than without apparatus. In the prolonged treatment of patients some advantages accrue from the use, conjointly or alternately, of exercises with and without apparatus. The interest of variety is added, and the opportunities for the adaptation of movements to special cases and conditions are more numerous. Most of the firms that sell pulley-weight apparatus send with them printed instructions and illustrations; but I must enter a word of caution against the employment of such apparatus by invalids without special medical supervision. Much harm has come to individuals, as well as to the subject of medical gymnastics, by the use of exercises without specific directions.

To a considerable extent I have personally directed the exercise-treatment of my patients in private practice and in the nervous wards and the insane department of the Philadelphia Hospital. Dr. A. H. P. Leuf, instructor in physical culture in the University of Pennsylvania, and Dr. O. H. Beckman and Dr. Mary Willits, assistants in the department of the mind and nervous system in the Philadelphia Polyclinic, have, under my instructions, successfully treated patients for me.

Mr. Clinton A. Dodge, of Philadelphia, is an able and experienced instructor and expert in gymnastics. During the present year he has treated for me, with marked success in most cases, patients suffering from neurasthenia, hysteria, habit chorea, neuritis, lateral spinal curvature, melancholia, etc. Mr. Dodge has also had under his charge the patients of other physicians, and, by their permission, he has given me some of the results of his work.

The director of these exercises should be thoroughly well fitted for his work. He should not only understand the work, but he should combine discretion with enthusiasm in pursuing it. If he is not a physician, or if he is a physician without special experience in such work, the treatment should be carefully supervised by some one more competent. The treatment should be carefully individualized. The instructor or director should not undertake too much in one day; and he will soon tire and do badly with his patients if he can not become interested.

Usually I combine respiratory exercises with the muscular movements. "On the two powers, muscular and respiratory," says Maclaren, "depends the ability to perform all bodily exercises." Inherent nervous force has also something to do with the capacity to perform bodily exercise. Of course, in any method of gymnastics respiration must to some extent be exercised. Breathing becomes accelerated and even painful under continuous active exercise. In speaking of respiratory gymnastics in this connection, however, I refer to special efforts of breathing—by taking deep, full breaths through the nose and mouth; by forced expiration as well as inspiration; by counting with a loud voice while holding the breath, etc. It is not my purpose to refer in this paper to the use of pneumatic chambers or other forms of pneumatic apparatus.

It is interesting to recall that the most ancient of books in which gymnastics is discussed, the Chinese treatise "Cong-Fou, the Art of Man," speaks particularly of the importance of respiratory gymnastics. Dally and others in the present century have maintained that respiration is the pivot of every gymnastic exercise, and systems of respiratory gymnastics have been invented (Dujardin-Beaumetz).

Want of respiratory power is certainly either at the root, or is an essential constituent, of many morbid nervous conditions. It is remarkable how much individuals differ with reference to their respiratory power, even when of apparently the same muscular ability. The development of the lungs, chest walls, diaphragm, abdominal walls, and other parts; the greater aeration of the blood which is conveyed to weak spinal or encephalic centers; and the greater control which the patients obtain over all nervous and muscular effort through these respiratory exercises, make them of decided value in cases in which active movements are applicable. On the other hand, it is quite possible that some harm may result from the incautious use of forced respiration. Carried on too long, both as far as giving lessons is concerned and as far as the weeks and months during which the exercises are continued, it is even conceivable that the air-cells may be unduly strained. Great care should be taken with those who are very weak generally or in a particular part, especially in the lungs or abdominal region.

The treatment should begin with the simplest forms of exercise, and these should be constantly increased and elaborated as the patients gain in skill and strength. It is wonderful how little some patients can do in this direction. A grasshopper in gymnastics is a burden to them. Five minutes or even less is sometimes all the time that can be safely taken at first, and five minutes of actual exercise must sometimes be distributed over half an hour. In most cases the time should never be allowed to exceed twenty to thirty minutes. Often it is important to give resting spells during the process of treatment. Some patients, ambitious to excel or fearing to appear weak, will certainly overdo. Individual peculiarities should be carefully studied. In the majority of cases of nervous and mental diseases in which systematized active exercises are indicated, the danger will be greater of overdoing than of doing too little.

It is an important practical matter to have the air of the room in which the exercises are performed as pure as possible.

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* *Op. cit.*, p. 101.

The room should be well ventilated. It is not necessary, particularly in the case of the nervous and weak, that the room should be without fire—indeed, it is sometimes better that there should be some warmth—but fresh air should be admitted to the room. Carrying out strictly hygiene in various directions will very much assist in getting good results with the exercises. When possible, it is well for the patient soon after finishing the exercises to take a sponge-bath, with tepid or cold water, according to individual vigor. Good food, regulated exercise in the open air, and plenty of sleep are, of course, important.

To illustrate clearly what is meant by simple respiratory exercises in connection with systematized muscular movements, I will quote for you from Blaikie's smaller work two of his very plain directions. I will also quote from the lectures of Dujardin-Beaumetz one of Dally's movements:

"*Directions.*—1. Stand four feet apart in the aisles, with arms folded behind you, and with one foot about eight inches in front of the other. 2. Now draw the head back and tip it as far down behind as you can. 3. Hold the chin up high. 4. Rest there a moment, then stand up straight again. 5. Repeat this exercise six times. *Caution.*—Breathe deep, full breaths all the time; indeed, always, when exercising, breathe slowly, and as large breaths as you can."

. . . .

"1. Take a dumb-bell in your right hand and hold it up high over your head. 2. Stand with the chin up high all the time. 3. Breathe a full, deep, slow breath. 4. Now slowly lower the dumb-bell, not down to your right shoulder, but across, above your head, and down over your left shoulder, as low as you can, till it touches your shoulder, letting your body tip over to the left. 5. Hold it there till you slowly count ten. 6. Now bring it back overhead again. Then do the same with the dumb-bell in your left hand. 7. Do this five times with each hand. Repeat this five times each day the first week, and twelve times daily after that right along."

One of Dally's respiratory exercises is as follows: He places the patient in a vertical attitude with the back against a wall; then, both arms being extended horizontally in front, the patient forcibly and slowly separates the fingers while he bends the thorax forward; he remains in this position thirty seconds, makes a deep nasal inspiration, and resumes the initial position; then makes a deep expiration, and repeats this exercise six times in succession.

Dujardin-Beaumetz, in reference to these exercises of Dally's, remarks that another and simpler exercise will render much service in developing respiratory capacity—viz.: To make the patient count with a loud voice as long as he can without losing breath. Before commencing to count he should make a deep nasal inspiration.

Among the diseases of the nervous system referred to by Dujardin-Beaumetz as calling for gymnastic treatment are muscular atrophies, deformities, chorea, and hysteria; and the conditions of ataxic, nervous, and neurasthenic persons, and the victims of mental overwork and sedentary life, and idiocy. He also discusses the uric-acid diathesis, gout, and diabetes, for which the neurologist is often consulted.

This paper is not founded simply upon theoretical considerations and a study of literature. For several years I have to some extent used systematized active exercises, either with or without apparatus, and during a year past I have had a considerable number of patients on this treatment. My objects, in addition to recording experience, are to call general attention to a too much neglected method of treatment, and to make certain practical suggestions which naturally grow out of a study of the subject. It will be impossible to give details of cases without dragging the paper to a wearisome length. When preparing this paper I was able to put my hands on forty-two such cases, not including those under treatment at the Philadelphia Hospital. Of these cases, twenty-five were treated by the general active exercises, some with and some without pulley-weight apparatus; the nineteen others by some local method for a special purpose. The cases treated by the general exercises included cases of idiocy, insanity, asthma, minor chorea, habit chorea, hysteria, general nervousness, neurasthenia, nervous palpitations, lithæmia, cerebral syphilis, diabetes, curvatures, ataxias, and paralyses; those treated by special more or less local methods included cases of hemiplegia or monoplegia, infantile paralysis, lead paralysis, rheumatic neuritis, muscular atrophy, aphonia, and writer's or telegrapher's disease.

For the feeble-minded, for the insane, and even for criminals, systematized active exercises can be used with great advantage. Those in charge of institutions for the idiotic and feeble-minded in France have in particular given much attention to gymnastics. It is only necessary to recall such names as Esquirol, Bourneville, and Pichery. At the Pennsylvania Training School for the Feeble-minded, at Elwyn, in charge of Dr. I. N. Kerlin, I have frequently, and with great interest and pleasure, witnessed the performances of the gymnastic classes. As many as eight separate classes are instructed at one time by as many teachers, and at intervals general exhibitions are given. The classes are graded from those pupils who can only perform the simplest movements up to those capable of elaborate and somewhat difficult exercises. At Barre, Mass., a gymnasium has been erected, and the children are thoroughly drilled and taught. The same is true of some other institutions for the idiotic and feeble-minded in this country. Much could be said, if time permitted, about the beneficial effects of regulated physical culture in idiocy. For the improvement of the general nutrition of a class of unfortunates usually deficient in this respect, as well as for their training and development, both mental and physical, systemic exercises are of the utmost value. In some of the grades of idiocy attention should be paid to individualizing the treatment by exercise. To a certain extent gymnastics can be used for diagnostic and prognostic purposes in idiocy, observation of those attempting systematized exercises determining the possibilities as to general improvement.

So far as I know, very little has been done with systematized movements in hospitals and asylums for the insane, although I believe insanity affords a great field for such treatment. In the first place, such exercises will do much toward improving the frequently deteriorated physical condition of the insane; secondly, they afford a method of calling out and improving the impaired mental faculties; and, thirdly, they constitute another valuable means of supplying to the insane that which all alienists now agree is most important for them—occupation.

"One of the great improvements that have taken place in modern asylum management," says Clouston,* "has been that rational physiological outlets are provided for the morbid muscular energy in cases of chronic mania. They are neither confined in their rooms nor within 'airing courts,' inclosed by high walls. They are made to wheel barrows and dig on farms. They are encouraged to dance, and are well fed. Most of them eat enormously, and if they have not enough to eat they fall off, get worse in their mental state, and in their habits. Many of them can be got to expend their energy in hard, regulated work, and are the very best workers on the farms and in the laundries of the asylums. They are not all, of course, furiously maniacal. Some of them simply have a slight morbid excess and exaltation of the brain convolutions, shown by restlessness, want of affection, want of self-control, but are not incoherent.

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* "Clinical Lectures on Mental Diseases," p. 158.

If they are kept at work, the most objectionable and repulsive parts of the older asylum life are avoided in a great measure, and the refractory wards, with their noise and danger, are not needed. The scenes with patients, attendants holding them down, and removing them into the seclusion of their own rooms, are few. No doubt there are risks run in the present system to patients and guardians, but I believe the risks are much less in reality than under the old system, for the patients are not so irritable, not so revengeful, and not so dangerous, generally."

By means of systematized exercises the insane can be provided with an additional "rational physiological outlet" for their morbid muscular energy on the one hand, and, on the other, with a rational physiological method of calling them out of their muscular and general torpor.

A few weeks since, in the Insane Department of the Philadelphia Hospital, I started a class in systematized active exercises, selecting eight women suffering from melancholia, and putting in with them to give zest to the treatment two other patients not mentally depressed. Sufficient time has not yet elapsed to determine how much in a curative way can be accomplished by such treatment, but already the experiment has proved to me an instructive one. I found that even these patients, plunged into the profoundest depression, could, by sufficient persistence, be aroused to the performance of some movements; others did moderately well; some very well. The difficulty of fixing the attention of these patients, and yet the possibility of doing it by sufficient effort, has been clearly shown. The class has made much improvement in facility and rapidity. Small classes should be formed in large insane asylums, and the treatment given a thorough trial.

An instructive case of mental disease, greatly benefited by systematized active exercises, is that of a young man who at the age of twenty-one broke down mentally, as the result of too great output of mental energy and physical exertion in business. He became depressed, and soon developed delusions of suspicion, believing that people were watching and following him. In a few weeks, under rest, the depression disappeared; he again attempted business, but became excited, and then developed ambitious delusions. He was admitted to an asylum for the insane, and in three months came out, apparently well. In brief, his subsequent history for eight years was that every year, late in the spring or early in the summer, he had a period of excitement followed by one of depression, each lasting about three months. About three years ago he began the use of systematized active exercises, after the method of Blaikie and others. He has since persevered with them, at the same time paying attention to diet, sleep, and general hygiene. On a few occasions he has had touches of elation, lasting only a day or two, but he has been able, owing to his increased physical and mental strength, to resist with success the beginnings of such attacks, and he has been entirely without the regular periods of depression and elevation for nearly three years.

An experiment made at the New York State Reformatory, at Elmira, has been frequently referred to of late by the medical and general press. An experimental class in physical culture was formed of twelve men, who for a period ranging from one to two years had made no appreciable progress in their school work, and who seemed incapable of prolonged mental effort, yet could not, strictly speaking, be considered mentally unsound, or representatives of a class known as feeble-minded; with the object of ascertaining, if possible, if physical culture, as comprised in frequent baths, massage, and daily calisthenics under the care of a competent instructor, would not result at least in the partial awakening and stimulation of dormant mental power. Increased mental activity rather than muscular development was to be the gauge of success or failure of the experiment.

Dr. H. D. Wey,* physician to the Reformatory, in reporting upon the results of the experiment, says that to those who were thrown in daily contact with the men, a mental awakening was apparent. They became interested in their studies, and strove to appear to the best advantage in the school-room. Their advancement in their studies was not steadily onward, but rather intermittently progressive. It will be interesting to note in the future, as Dr. Wey remarks, whether the good results are permanent; but whether they are or not, the step is one in the right direction, and is to be commended to penologists everywhere.

Systematized active exercises serve a good purpose in some of the various disorders designated as asthma. One patient whose case was of this kind, a young lady, despondent, weak, dyspeptic, hysterical, with a feeble heart, and subject to attacks of asthmatic breathing, improved with great strides in a few weeks under general active exercises. She began treatment with half-pound dumb-bells, and at first could only stand five minutes' work. The exercises were increased until half an hour was reached and dumb-bells weighing four pounds were used.

In the treatment of chorea, or rather choreas, systematized active exercises are valuable. Special forms of gymnastics have been employed for this affection to some extent, particularly in France and Germany. Napoleon Laisné,† a French professor of gymnastics, and evidently an earnest and enthusiastic worker in his chosen field, under the directions of Dr. Blache and other physicians of Paris, has used gymnastics largely both for chorea and for other convulsive disorders. In 1865 he published a book in which his methods are set forth. Both Schreiber and Dujardin-Beaumetz refer to his labors and successes. His method in mild cases, as described by Schreiber, is to place the child before him, steadying it between his knees, and then take its hands in his, and perform rhythmic movements with each arm, keeping time by counting, or, better still, singing, out loudly—"one," "two," "three," etc. The child at the same time is also urged to try and keep time with the movements, and not to make them irregularly.

"Care must be taken in the beginning to prevent, as much as possible, the coincidence of involuntary movements with the rhythmic ones. When the arms have been exercised, similar movements are undertaken with the legs. From time to time a pause for rest is made, during which the limb must be held firmly enough to prevent the occurrence of involuntary motions. The child is then laid on its back upon an inclined ladder, the feet being held by an assistant; then grasping a rung above its head, it holds on in that position as long as it is able. This is to be repeated several times, and to be followed by a short rest. Afterward, the shoulders, back, and legs are rubbed and gently kneaded."

Lengthy details of treatment will be found in Schreiber's "Manual."

Two cases of minor chorea improved under medicinal treatment up to a certain point, and then would advance no further. General exercises with light dumb-bells were ordered, and in both cases the progress to complete recovery was rapid.

In the treatment of habit chorea, these exercises have a peculiar value. This, whether in children or adults, is an annoying and distressing disorder, and commonly intractable. By habit chorea is meant an abnormal movement or series of movements, voluntary or partially involuntary, repeated at frequent intervals. Mitchell * records two interesting cases, and recommends for treatment careful and good diet, light gymnastics, no school, gentle aperients, and full doses of arsenic, particularly the hypodermic injection of arsenic in the form of Fowler's solution. I refer to this treatment, as he includes light gymnastics among the measures recommended. Among my nervous patients I have had a goodly number with habit chorea. Nearly thirteen years ago I reported the case of a girl, fifteen years old, who had peculiar movements of her right ear, after a time associated with twitchings of her nostrils and upper lip and the limbs of the right side. Another patient, under excitement, made a movement of extension and semi-rotation with one arm, sometimes accompanying it with twitching of the facial muscles. Facial grimaces constitute, as is well known, one of the most common forms of habit chorea. I have now under my charge a case of habit chorea which is being treated successfully by systematized active exercises. The patient, a young lady, eighteen years old, began to be troubled with spasmodic movements nine years ago. These lasted at first from one to two years, then disappeared for a year to return again, and have since gone and come several times. For the last two years, however, she has been troubled almost continuously with the movements, and has tried various modes of treatment, chiefly medicinal, but without any decided benefit. The chorea consists of a sudden jerking of the head downward and to one side, which may be performed once or several times in succession. Either with or without this twitch or jerk, she frequently also has a snapping movement of both eyes. The chorea was not started by imitation, but it is much influenced by any cause of nervous excitement, such as fright.

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* "Annual Report of the New York State Reformatory, at Elmira, for the Year ending September 30, 1886."

† "Applications de la gymnastique à la guérison de quelques maladies," Paris, 1865.

Systematized gymnastics, either general or local, constitutes a rational treatment for cases of this kind, because by means of such exercises not only is the general nutrition of the patient improved, but the nerve-centers are given tone and strength, and good habits of movement are made to replace bad ones. Such eccentric and abnormal movements are the result of eccentric functioning by nerve-centers, or of irregularities in the conveyance of impulses through nerve-channels. By again and again causing normal impulses to be conveyed in a normal manner to muscles, in time the choreic habit will be overcome. Such treatment, however, needs to be persisted in for months.

The advantage of any treatment which involves specific direction and the adroit calling out of the volition of a patient must be evident to every one who has had experience with hysteria in its manifold forms. In hysterical paralysis much can be done by laying out a careful plan of treatment by exercises, and gradually leading up to their full performance. In referring subsequently to ataxias and palsies, functional and organic, methods to this end will be considered. For the improvement of nutrition, and of what may be termed the general nervous and mental tone of hysterical patients, systematized active exercises fill an important place. Properly used and controlled, they may also prove most beneficial in cases of general nervousness, and also for neurasthenia. Whatever view may be taken of the much-mooted question of neurasthenia, without doubt both respiratory and muscular power, either primary or secondary, are often deficient, and the nerve-centers themselves can be strengthened and improved by exercising these two powers. Care should be taken not to force individuals suffering in this way to excessive effort at first.

Great are the advantages which result from the sojourn by sea or mountain, from the cure of camp and ship; but the improvement of health obtained by such holiday treatment is often soon lost in whole or in part by the individual going back too completely to old habits of living and working. A resort to systematized active exercises for a few minutes daily will do much toward keeping the good that has been obtained.

"A man," says Maclaren, "can not, in a week or two, eat sufficient food to supply the demands of the appetite for a whole year, neither can he take sufficient exercise to keep his body in health throughout the four seasons in a summer's ramble. These mountain excursions or sea-side sojourns must be *in addition to*, and involving no curtailment of, the daily walk to and from business, the daily ride to and from somewhere, or the daily employment with or at something—a something which will in its doing quicken the pulse and augment the breathing, and, if possible, bring the perspiration to the forehead."

For those forms of nervous palpitation which are dependent upon a neurasthenic condition, associated or not with digestive disorder, systematized active exercises are of great value. The exercise should at first be light, but should be carefully and somewhat rapidly increased. Besides the indoor exercises, after the method of Blaikie, or with the pulley-weight apparatus, the patient should use deep breathing while walking out of doors. A case reported by Dr. Theodore Clemens,* of Frankfort-on-the-Main, is interesting in this connection. The patient was a man, forty-six years old, who applied for treatment on account of distress and irregularity of the heart. Clemens decided to make him do the thing he most dreaded—viz., climb up several flights of stairs. The effect was most happy. The patient's pulse, which had intermitted at every tenth or twelfth beat, wavered only twice, and but slightly, in a hundred beats after he had mounted three flights of stairs twice. He now decided to make similar efforts regularly every day, and in three months he was a well man.

For the group of diseases which fall to the lot of both the neurologist and the orthopædist—cases of curvature, deformity, atrophy, etc.—systematized active exercises have long been used by the best authorities. I can only refer in this general way to this branch of the subject in the present paper. My more particular object is to call attention to the value of systematized respiratory exercises in setting up or straightening the feeble and stooped, who also frequently are sufferers in some degree from nervous or mental weakness. If at the same time appropriate general hygiene is used, the improvement in such cases is sometimes simply wonderful. I have notes of a number of cases treated by Mr. Dodge and myself to bear witness to the truth of this statement, but time will not permit me to refer to these in detail. A gentleman whose son had been using systematized active exercises wrote to Mr. Dodge as follows:

"I have pleasure in assuring you that I think my son has wonderfully improved in health and appearance during the past month, while under your care. Even in two weeks we saw a marked change in him for the better—his stooping shoulders (made so by outgrowth of strength) straightening marvelously."

For gout and lithæmia, to promote excretion and nutrition; for anæmia and spanæmia, to assist assimilation and further oxidation; for headache, sleeplessness, and nervous irritability, to soothe and calm the nervous system; to aid elimination in cases of lead, arsenic, mercurial, and other metallic or toxic diseases; for diabetes, to favor the skin and increase combustion—systematized active exercises have a value which can not be too highly extolled, and one which I have had an opportunity to demonstrate in my own practice.

In curable ataxias, as in those which follow diphtheritic or exanthematous diseases, and in the hysterical varieties, systematized active movements, the patient at first lying down or sitting, and subsequently standing, have proved of great service in my hands.

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* "Lecture on Diseases of the Nervous System, especially in Women," by S. Weir Mitchell, M. D. "Philadelphia Medical Times," March 28, 1875.

* "Medical and Surgical Reporter," October 22, 1887.

In Dr. Mitchell's lectures,* some valuable advice and interesting details are given with reference to the best method of slowly training by what are really systematized active movements, although not so called by him. The weak and inapt muscles are cautiously brought into use. The patient is first convinced, after she has made an effort which seems extreme, that another forth-putting of will must add to the previous results. The nurse begins to train the patient while in bed, to move the legs one at a time very slowly, but in larger and larger movements, with intervals between of a minute or more.

"An order is given to lift the leg; if it be too weak, a finger beneath the ankle aids it, but no attempt must be let to fail utterly; as she gets on, the orders are to be obeyed more quickly. It is easy to sketch out for one's self what such a system should be in its details. After it has gone far enough the patient is seated in bed with some support to her spine, and is trained to move the head freely. The next step used with me to be a lesson in walking, but of late I find it better to teach the girl to creep, which is an easy and natural mode of training for the walk. The patient has pads tied over her knees, and, lying flat on her face on the floor, without skirts, has around her a folded sheet. At an order she tries to rise, helped by a lift of the sheet belt by the nurse. When she is able to do this, and gather her legs and arms so as to make herself a quadruped, she is taught to balance herself, every effort being assisted, when needing help, by the nurse standing above her. The progress to creeping is easy; then comes the lesson of kneeling and pushing a chair; and last, that of standing in a corner or by a chair."

In the treatment of ataxic affections, even sometimes when dependent upon organic disease of the cerebro-spinal axis, the use of what may be called balancing or acrobatic gymnastics is of some value. Dr. Mortimer Granville, in the "Practitioner" for 1881, and subsequently in his monograph on "Nerve Vibration and Excitation," discusses a method for the regeneration of the nerve elements by exercise on the basis of the law of development through function, holding that the ataxic subject is reduced to the position of a child just learning to stand or walk. His plan is to direct the patient to stand with his eyes closed in his bath, after pouring a small can of water down his spine, or applying a mustard poultice over the full length of the spine for ten minutes or a quarter of an hour, to persevere in an attempt to stand for, at first, a quarter of an hour, and, as his state improves, for half an hour every morning. He is to be furnished with a chair or rail at hand, to which he can cling in case of need, but is instructed to avoid using it except when in danger of falling. The exercise must be continued diligently for weeks before success can be obtained.

In patients suffering from multiple neuritis, or some curable forms of myelitis, advantage should be taken of the first signs of motor improvement to begin with active exercises, while the use of electricity and massage is continued. The particular point upon which I desire to insist is that the attempt to join the will of the patient to the long unused muscles shall not be deferred a moment longer than is necessary. Simple attention to this truth, which ought to be self-evident, would, I think, in many cases have saved patients from weeks or months of uselessness.

In the treatment of various forms of paralysis that systematized active movements may be employed with advantage has long been known. Even in paralysis from organic brain disease a clear method of using gymnastic treatment will be found to serve an excellent purpose. Such paralysis is usually the result of hæmorrhage, embolism, thrombosis, tumor, abscess, or depressed fracture; less frequently of meningitis or encephalitis, of atrophy or arrested development, and still more rarely of uræmia. Sometimes in cases of sudden lesion, such as hæmorrhage or embolism, the assault upon the nervous system is so violent, or the destruction is so great, that death results quickly, or the patient is reduced to a state of utter helplessness, for which, practically, nothing can be done. In many cases, however, soon after the attack, or even at a later period, the amount of palsy is disproportionate to the cerebral lesion by which it has been initiated. Many cases of monoplegia and hemiplegia illustrate this truth. Little by little some of these patients regain muscular power to such an extent as almost to induce the belief that they will get entirely well; indeed, in some cases of hæmorrhage, tumor, traumatism, syphilitic meningitis, and uræmia, complete or almost complete recovery does occur. We should, therefore, not disregard entirely the treatment of such patients.

The course of treatment usually pursued in these cases in the main wise is, at first, to do little more than protect the patient from disturbing influences; and after the shock of the attack, and the acute inflammation which sometimes accompanies or follows it, have subsided—that is, in a few weeks or months—to give absorbents and alteratives, and to apply electricity and possibly massage, allowing the patient to use the affected limb as he sees fit. More than this, however, should be done; and it is just here that single active exercises, after some thorough system, may play a useful part. Every effort consistent with safety should be made to unite again the paralyzed limb with the volitional centers. Such patients often need to be incited to effort.

Two methods of systematized active exercises may be tried for these hemiplegias and monoplegias. One is the method partly of duplicated active, and partly of single active movements, used and described by some of the writers on Swedish movements, as, for instance, by the Taylors. The patient is placed in a recumbent or half-reclining posture, so that he may be able to direct all the cerebral energy at his command toward the paralyzed member, and is then urged to make some simple movement. If he succeeds to ever so slight a degree, he should simply be encouraged to repeat the movement, but he should be carefully guarded against undue or too prolonged effort. Other simple movements are added from time to time. If he can do absolutely nothing, the operator should perform on the patient the desired movement, while the latter fixes his attention upon the performance and tries to assist. When a little headway has been made systematized active movements should be used in conjunction with electricity, massage, and duplicated active movements in an orderly and thoroughly regulated manner. With light dumb-bells and with the pulley-weight apparatus all possible movements, and particularly those which are most wanting, should be cautiously encouraged. From a cautious pursuance of such methods I have seen a surprising result in a number of cases supposed to have reached the limit of improvement. Such treatment does good, not only because the original lesion may have been partially removed, but also because by such efforts portions of the brain adjoining the centers destroyed may be made to take on new function; or possibly in some instances the other hemisphere of the brain may be called into new activity. To central spinal palsies, as well as to paralysis from brain disease, in a large measure the same truths apply.

Another method of gymnastic treatment which I have often employed with benefit in cases of monoplegia and hemiplegia is to cause the patient, first, to make a movement upon the unaffected side, and then instantly to perform the same movement with the paralyzed member, following this quickly with an attempt to do the same thing with both limbs. It is surprising the curious results that will be sometimes obtained in this way, if the leg is but little affected and the patient can stand while these movements are performed by the upper extremities. To exercise the legs the patient, of course, should be placed in an easy position, and one that will allow the movements to be performed with the greatest convenience. Exercises of this kind probably have some effect in bringing the paralyzed side of the body under control of the uninjured side of the brain through commissural channels in the spinal cord.

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* *Op. cit.*

For some of the arthritic neuroses and for rheumatic neuritis, or muscular rheumatism, these exercises are of undoubted value. I have seen three cases of a form of rheumatic neuritis affecting the deltoid and adjoining muscles in which the progress to complete recovery was much assisted by an early resort to dumb-bell exercises and pulley-weights. Cases of this kind are best treated by using large doses of oil of gaultheria, or sodium salicylate, with hypodermic injections of morphine in the most acute stage, a little later resorting to massage, electricity, or both, and then to exercises with light dumb-bells or pulley-weights. Here, again, the point I wish to impress is that such active exercises should not be deferred too long.

Hysterical aphonia or apsythria (loss of the power of whispering) can sometimes be treated successfully by a species of respiratory gymnastics, or a combination of respiratory with vocal and muscular gymnastics. Dr. Mitchell has described a method of bringing back the voice which is really a form of respiratory gymnastics, a method which I have used several times with success, and less frequently with failure. Speaking of a young woman who had good power over the laryngeal muscles, but could neither speak nor whisper, he concluded that if he could teach her to speak only with a very full chest, he might secure an involuntary success. Asking her to fill her lungs several times, and when very full to keep her mouth wide open, he then had her try to sound the broad A, at the same time breathing out violently. She made a clear, audible sound, and was at once on the high road to cure. Some years ago, with this simple method, I obtained a brilliant success with a young lady who had not spoken even in a whisper for many months. I now combine light dumb-bell and pulley-weight chest exercises with this method.

In certain cases the treatment by rest, seclusion, etc., can be successfully combined with that by systematized exercises. After the nervous or broken-down patients suitable for the treatment have progressed to a certain point, after their nutrition has been placed upon a firm basis, respiratory exercises without apparatus, or with very light dumb-bells, can be carefully begun. Five minutes, or perhaps only three minutes, should be taken at first, and the time should be increased with the utmost caution. In a recent neurasthenic case with hystero-epileptic seizures, after the patient had improved under the rest treatment, systematized active exercises were resorted to with the greatest benefit. In those cases of hystero-epilepsy in which the seizures are partially voluntary, or of the induced voluntary kind, the use of such exercises assists the patient in obtaining the control of herself and her movements which enables her to resist the beginning of the attacks.

Dr. C. F. Taylor, in the book to which I have already referred, has hit the secret of the combination of rest and exercise in certain cases.

"The true remedy," he says, "is rest and exercise. Let the rest be complete relaxation of all muscular effort—not the entertaining of company, sitting bolt upright, so that the spinal muscles must be constantly acting, or reclining in a 'graceful' attitude on a lounge, with book in hand, but a completely sustained position, when all the muscles must cease to act. Then the exercises to follow should be short, varied, and taken with some vigor."

The now generally accepted views with reference to cerebral localization throw some light upon the manner in which systematized active exercises, or other forms of gymnastic treatment, improve or repair the nervous system, and especially the brain. This fact has not been overlooked by the authorities in neurology and gymnastics, as by Emil Du Bois-Reymond, Schreiber, Crichton Browne, and others. In the brain are represented both a differentiation and an integration or solidarity of function. Centers for speech, for vocalization, for particular movements, for the special senses, for the muscular sense, for organic sensations, for some of the higher faculties, as of attention and inhibition, are now, with reason, alleged to have been isolated. For the localization of some of these—as that of speech, the motor, and some of the sensory centers—the facts and arguments are practically incontrovertible. In the plainest of terms, if brain centers which determine certain movements exist, the performance of these movements must develop and train not only the muscles concerned in these actions, but the cerebral centers with which they are connected.

Dr. Howard A. Kelly said that, some six years ago, while living in Colorado, a friend and himself followed the directions contained in Blaikie's book very carefully. His friend was consumptive, and had since died. In spite of the condition of his chest he was able in one month to add a full inch to his chest-capacity. The speaker was practicing at the same time, and succeeded in adding three fourths of an inch to his own. This gain was distinctly in chest-capacity, and due to increased development of the muscles. He thought that Blaikie's great merit lay in the extreme simplicity of the exercises directed, many of which consisted of simple rhythmical movements of the body. Among his most elaborate apparatus for room exercise was a single bar placed between the jambs of the door. It should be borne in mind that gymnastic exercises were but the substitute in city life for what people got naturally in the country. A most important point was one to which Dr. Mills had referred, that these exercises should be carried out in a medium of fresh air, and not in the superheated air of a furnace-heated house. When the speaker was in Rostock with Professor Schatz he had had some interesting discussions with him upon the subject of intra-abdominal pressure, and he suggested a series of questions. One was, "In which case is the intra-abdominal pressure the greatest, when the person is lifting a bucket of water with one hand, or when lifting two buckets with both hands?" The speaker said that it was greatest when he was lifting one bucket with one hand, for then he made a column of the abdominal muscles on the opposite side, and necessarily increased both the intra-abdominal and intra-thoracic pressure, while in the second case the strain came upon the muscles of the back, and pressure was not increased. The key-note to the application of this subject to nervous diseases must be this, that deficient innervation was due to deficiency and irregularity in the circulation, and improvement of the circulation was what was accomplished by gymnastic exercises.

The President (Dr. J. Solis-Cohen) said he had long been interested in movement cures, and could recall an interesting case which was under his care in 1860, while he was a resident at Blockley Hospital. A poor wood-sawyer had lost the use of his lower extremities as the result of exposure to cold. Not many months previously Dr. Fayette Taylor, of New York, had explained his methods of resistance movements to the speaker, and he determined to try them on the right leg of this man; so once or twice a day he caused the man to try to move his leg against resistance, and moved it himself against his attempts at resistance. Some weeks later, when he was showing one of the attending physicians the improvement which had been produced in the right leg, the patient suddenly said: "Doctor, that is your leg, now look at mine," and, throwing off the cover, he kicked his left leg vigorously. Finding the benefit to the right leg so great, he had quietly practiced on the left leg on his own account, and had done much better with it.

Dr. Benjamin Lee said it was now about ten years since the reader of the paper had published a lecture in which the views expressed this evening were somewhat tentatively expressed. It was gratifying that after this lapse of time he could substantiate what he had then held in a partially theoretical way. The treatment of nervous affections by gymnastic exercises naturally divided itself into two branches—the treatment of functional and that of organic disease. In regard to functional troubles, the speaker had always felt that the nerves on the whole were the best-behaved parts of our economy; that all they wanted was good feeding. When a nerve misbehaved it was because it wanted nourishment. Not that the patient might not be putting enough food into his stomach. He might be gorging himself, and yet the nerves not receive a supply of nourishment of the proper quality and adequate to the demands made upon them. In the muscular system we possessed the great lever to act upon nutrition, and, if we made use of the muscular system intelligently, we could in the majority of instances supply to the nerves their needed nourishment, and in that way overcome the functional nervous disease. His own experience with the use of active exercises alone in the treatment of such cases had been limited. He had always combined with it massage and duplicated movements—that is to say, those in which the operator either made a movement which the patient resisted, or resisted a movement which the patient attempted to make. The form of exercise in which the operator made a movement which the patient resisted gave us one of the most powerful means of acting upon nutrition. It was what we termed a duplicated eccentric movement, or, if the term might be allowed, an eccentric contraction. By a concentric contraction of the muscle we understood that which every muscle made in an ordinary movement, in which, the muscle cell contracting in the direction of the axis of the muscle, the latter was in consequence shortened. By eccentric contraction we understood an effort at contraction on the part of the muscle in which the operator used a greater force than the patient, and the muscle was really elongated instead of being shortened. In this way the nervous energy of the patient was directed most energetically to the muscle, and yet at the same time, as it was elongated, we were inviting into it an increased supply of blood. The author had referred to the danger of these exercises being carried to excess. This was particularly likely to happen where the exercises were carried on in classes. It was essential in carrying out this treatment in nervous cases that each case should be treated singly on its merits. When we came to the treatment of organic nervous affections his experience had been that, in the early stage of the disease at least, very little should be done in the way of active exercise. We should rely upon massage and passive exercise. Afterward active exercise should be given in the way of carefully regulated duplicated movements. Another important point was with reference to the early use of exercise in all forms of paralysis, and especially in infantile paralysis. He believed that there were hundreds of crippled children and crippled adults going about who, if their cases had been undertaken in the way described by the author, as soon as the slightest trace of muscular power could be observed, would now be able to walk and have the use of their limbs.

Dr. S. Solis-Cohen said that Dr. Mills had referred to the use of exercise in the treatment of criminals. He presumed that he meant more especially the criminal insane. It might, therefore, not be irrelevant to quote the views of Dr. B. W. Richardson in reference to the prophylaxis of criminal insanity, or, if these were too strong words, the rectification of the inherited moral obliquity which, conjoined with ignorance and misery, led to law-breaking, by teaching those predisposed to a life of crime to use their muscular and nervous energies in useful pursuits. He would make the prospective forger an engraver, the prospective burglar a blacksmith or a locksmith, and so on. The arguments advanced by Dr. Richardson could be found in a recent number of the "Asclepiad," and were worth reading. Dr. Richardson called attention to the high importance of this subject by illustrations from the reformatory schools. He stated that children who were unruly and could not be kept in order had been rendered docile and obedient by having their nervous energies liberated in regular gymnastic exercises at such periods as experience had shown that disorder was most likely to occur.

Book Notices.

Lectures on the Diagnosis of Diseases of the Brain, delivered at University College Hospital. By W. R. Gowers, M. D., F. R. S., Professor of Clinical Medicine in University College, etc. Second Edition. Philadelphia: P. Blakiston, Son, & Co., 1887. Pp. vii–254. [Price, $2.]

Most students of neuro-pathology are probably familiar with the first edition of Dr. Gowers's little book. In this, the second edition of his lectures, additions of quite an extensive character have been made, so that the value of the work as a whole has been considerably enhanced. The chapters on the "Medical Anatomy of the Brain," the "Cerebral Circulation," and the "Mechanism of Brain-Symptoms," are exceedingly well written. We would also commend the lectures on the cranial nerves and those on the affections of sight, and particularly the paragraphs on hemiopia, which will be found at once interesting and instructive. The author has a way of throwing the principles of his subject into bold relief, of dividing the wheat from the chaff, so that a subject which is regarded with more or less apathy by the average practitioner is made attractive. Finally, there is no parade of cabalistic anatomy, that spectre which has cooled the ardor of so many practitioners when thrown in contact with neurological literature. The book can not fail to prove of benefit to students of neuro-diagnosis and physiology.

Health Lessons. A Primary Book. By Jerome Walker, M. D., Lecturer on Hygiene at the Long Island College Hospital, and on Physiology and Hygiene at the Brooklyn Central Grammar-School, etc. New York: D. Appleton & Co., 1887. Pp. 4–7 to 194.

To write a useful book of science for small children is a most difficult task, and Dr. Walker has done wisely in confining himself mainly to hygiene, introducing barely enough anatomy and physiology to explain his instructions. The desire to illustrate his meaning vividly has, in a few places, led him to use expressions of doubtful appropriateness, such as may perhaps convey a wrong impression to a child's mind; for example, he speaks of "machinery" in our heads and bodies, of the "food-pipe," and of "boat-like cells" in the blood. On page 57 it is rather awkwardly stated that the saliva is squeezed out of the salivary glands by chewing; this is likely to be misapprehended. A child might easily be confused by reading on page 83 that the capillaries are too small to be seen without a powerful microscope, and on page 85 that a few of them are shown in the colored picture representing the circulation of the entire body. The wisdom of an unqualified recommendation of newspapers for lining clothes (p. 97) may be doubted, for they only retain warmth, as a rubber garment does, because they are impervious to air. On page 137 the sentence "Your muscles should be so strong that you would be able to hold yourself erect on both feet for a short time at least" apparently refers to rising on the toes, although, as it reads, it means simply standing erect. We have noticed but one misprint—viz., on page 130, where the spine is said to be "made up of thirty-six bones," instead of twenty-six.

These criticisms are made with a view toward making a good book better. Dr. Walker has selected his material with good judgment, and presented it in a way likely to excite the interest and impress the memory of children. As an early guide and teacher, and as a preparation for the more advanced studies of youth, this little volume will serve an excellent purpose exceedingly well.

Études cliniques sur le morrhuol (extrait de l'huile de foie de morue brune). Par E. Chazeaud, Docteur en médecine de la Faculté de Paris. Paris: G. Steinheil, 1887. Pp. 56.

This brochure opens with an introduction upon the value of cod-liver oil and the difficulties often encountered in administering it. In the historical part that follows, the author mentions the various substitutes for cod-liver oil that have been tried from time to time and been found wanting. In 1884 M. Chapoteaut, stimulated by the desire to obtain the active agent of cod-liver oil, so that it could be given separately from the nauseous oil, undertook a number of experiments. As a result of these he found that, when the oil was treated with alcohol, the alcohol became colored, and, on evaporation, yielded an amber-brown, aromatic liquid, partially crystallizing at ordinary temperatures, and containing compounds of iodine, bromine, and phosphorus. This product has been termed morrhuol, and is said to be the active principle of cod-liver oil. Brown oil contains from four to six per cent. of morrhuol, while the pale oil contains only from two to three per cent.

The brochure embodies the clinical histories of ten cases of pulmonary tuberculosis in various stages in which morrhuol had been administered. An improvement occurred in all, but the most brilliant results were obtained in the early stages of that affection. These are the conclusions which the author draws: 1. Morrhuol increases the appetite and regulates the digestive functions. 2. It increases the weight of the body. 3. It increases the urea in the urine. 4. It diminishes the cough and expectoration, and all the symptoms dependent thereon.

The agent is put up in capsules, eight of which contain a gramme (fifteen grains), the usual daily dose, but the author has given as many as ten capsules without any untoward effects. In conclusion, he maintains that in morrhuol we have a remedy which is capable of accomplishing all that cod-liver can do without any of the disadvantages of the latter.

BOOKS AND PAMPHLETS RECEIVED.

Seventeenth Annual Report of the Managers of the Buffalo Asylum for Insane for the Year 1887.

L'evoluzione odierna della medicina legale e l'antropologia criminale. Pel Dott. Angelo Zuccarelli, libero docente, con effetti legali, di psichiatrica e clinica psichiatrica e di medicina legale all' Università, etc. [Estratto dalla "Psichiatria," Anno V, 1887.] Napoli: Nicola Jovene & Co., 1887.

Report of Proceedings of the Illinois State Board of Health. Annual Meeting, Springfield, January 12 and 13, 1888. Cholera Quarantine, Medical Education.

California of the South. Its Physical Geography, Climate, Resources, Routes of Travel, and Health Resorts. Being a Complete Guide-book to Southern California. By Walter Lindley, M. D., and J. P. Widney, A. M., M. D. With Maps and Numerous Illustrations. New York: D. Appleton & Co., 1888. Pp. viii–377.

Foot-and-Mouth Disease as it affects Man and Animals, and its Relation to Human Scarlatina as a Prophylactic. Also Remarks upon the Transmission of Human Scarlatina to the Lower Animals and the Use of Virus thus cultivated as a Preventive Agent. By J. W. Stickler, M. S., M. D., Orange, N. J. [Reprinted from the "Medical Record."]

Transactions of the American Ophthalmological Society. Twenty-third Annual Meeting, New London, Conn., 1887.

Third Annual Report of the Managers and Superintendent of the North Texas Hospital for the Insane at Terrell. For the Year ending October 31, 1887.

Twenty-fourth Annual Report of the New York Society for the Relief of the Ruptured and Crippled. For the Year ending September 30, 1887.

Transactions of the American Dermatological Association at the Eleventh Annual Meeting, held at the Hall of the Maryland State Medical and Chirurgical Faculty in Baltimore on the 31st of August and the 1st of September, 1887. Official Report of the Proceedings by the Secretary, G. H. Tilden, M. D., Boston, Mass.

Miscellany.

A Novelty in Sneak-thieving.—Dr. Charles B. Kelsey writes to us as follows: "The latest sneak-thief game is to call on a doctor and ask for his card, as 'a patient wishes to write him from Brooklyn.' The card is presented at a neighboring drug-store with a verbal order for two bottles of Vichy. An hour later the bottles are returned, and the amount of the deposit is collected from another clerk than the one who gave them out. Of course, there has been no deposit, and, if any money is collected, it is so much gained. This game was worked on Messrs. Hazard, Hazard, & Co. with my card last night. The man is tall, smooth-faced, fairly well dressed (overcoat buttoned up tight, as if to conceal poorer clothes), and about twenty-five years old."

A Change of Residence.—Dr. J. K. Bartlett desires us to notify those of our readers who may have occasion to write to him that he has moved from Milwaukee, Wisconsin, to Berkeley, California.

The New York Academy of Medicine.—At the next meeting of the Section in Neurology, Friday evening, the 10th inst., Dr. Henry Ling Taylor will read a paper entitled "The Hygiene of Reflex Action."

At the next meeting of the Section in Surgery, Monday evening, the 13th inst., Dr. F. W. Murray will read on "Aneurysm of the Internal Pudic Artery"; Dr. R. Abbe, on "Gangrene of the Perinæum"; and Dr. George L. Huntington, on "The Operative Treatment of Old Fractures and Dislocations of the Radio-humeral Articulation."

The Society of Medical Jurisprudence and State Medicine.—At the next meeting, to be held at the Academy of Medicine, on Thursday, the 9th inst., Austin Abbott, Esq., will read a paper entitled "The Physiology of a Rogue."

The Orange Mountain Medical Society, of New Jersey, held its annual meeting on January 27th. The following-named gentlemen were elected officers for the ensuing year: Dr. George Bayles, of Orange, president; Dr. W. H. White, of Bloomfield, vice-president; Dr. T. W. Harvey, of Orange, secretary; Dr. T. R. Chambers, of East Orange, treasurer; Dr. J. H. Bradshaw, of Orange, reporter; Dr. White, Dr. Bayles, Dr. Buttner, Dr. Bailey, and Dr. Harvey, members of the executive committee; and Dr. Chandler, Dr. Berry, and Dr. Van Wagenen censors. The society has now entered upon its fourth year. Monthly meetings are held throughout the year. The membership is limited to thirty.

The Lane Lectures.—The sixth course of popular lectures at the Cooper Medical College, San Francisco, under the auspices of Dr. L. C. Lane, is now in progress, a lecture being given every alternate Friday evening. On January 6th Dr. Lane lectured on "Coffee"; on January 20th, Dr. Clinton Cushing, on "Physical Excellence"; and on February 3d, Dr. A. Barkan, on "Spectacles." The lectures yet to be given are as follows: February 17th, by Dr. J. H. Wythe, on "The Microscope as a Detective"; March 2d, by Dr. Charles H. Steele, on "The Bath"; March 16th, by Dr. C. N. Ellinwood, on "The Stomach"; April 6th, by Dr. J. O. Hirschfelder, on "Electricity in Medicine"; April 20th, by Dr. W. S. Whitwell, on "Insanity"; May 4th, by Dr. Henry Gibbons, Jr., on "The Utility of Pain"; and May 18th, by Dr. W. D. Johnston, on "Lower Forms of Life."

The Loves of the Bacilli is the title of the following verses, by H. S. C., quoted by the "Lancet" from the "St. James's Gazette":

Quoth Bacillus to Bacilla
  (Surely everything has sex):
"It is quite enough to fill a
  Soul with pride, to see the necks
Of these mighty men of Science
  O'er the microscope bent low,
While beneath them in defiance
  Spins the merry Vibrio.

"Proud am I to think, my Comma,
  While the world rolls on its way,
Every fell disease springs from a
  Fairy filament, they say.
Autocrats that tower Titanic
  Have been known to bow to me;
Mighty potentates in panic
  Disinfect at thought of thee.

"Rash would he be who should presage
  That no germs behind us are;
We are part of that great message
  Which outrings 'twixt earth and star.
What by thousands or by tens is
  Multiplied, in vain they show;
Something lies beyond his lenses
  Mortal man may never know!

"We are greater, my Bacilla,
  Than all monarchs; for meseems
We need but exist to fill a
  Strong man's brain with fever-dreams.
Such the thought my passion kindles,
  O my microscopic bride:
Kiss me! although twenty Tyndalls
  Have their eyes upon the slide!"

The Health of Boston.—During the week ending Saturday, January 28th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 25 cases and 6 deaths; scarlet fever, 32 cases and 6 deaths; typhoid fever, 1 case and 2 deaths; measles, 12 cases. There were also 28 deaths from consumption, 41 from pneumonia, 4 from whooping-cough, 9 from heart disease, 14 from bronchitis, and 3 from marasmus. The total number of deaths was 223, against 204 in the corresponding week last year.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending January 27th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending January 7th corresponded to an annual rate of 23·8 in a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 14·8, and the highest in Plymouth, viz., 40·3 in a thousand. Small-pox caused 27 deaths in Sheffield, 1 in Bristol, and 2 in Leeds.

London.—One thousand eight hundred and sixty-eight deaths were registered during the week ending January 7th, including 25 from measles; scarlet fever, 37; diphtheria, 28; whooping-cough, 120; typhus, 1; enteric fever, 28; and diarrhœa and dysentery, 12. The deaths from all causes corresponded to an annual rate of 22·8 in a thousand. In greater London 2,370 deaths were registered, corresponding to an annual rate of 22·4 in a thousand of the population. In the "outer ring" 6 deaths from diphtheria; measles, 11; fever, 7; and whooping-cough, 45, were registered.

Ireland.—The average annual death rate represented by the deaths registered during the week ending January 7th in the sixteen principal town districts of Ireland was 35·4 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 5·2, and the highest in Newry, viz., 45·7 in a thousand.

Dublin.—Two hundred and sixty-one deaths were registered during the week ending January 7th, including 2 from measles; whooping-cough, 9; scarlet fever, 9; enteric fever, 5; and diarrhœa, 6. Diseases of the respiratory organs caused 73 deaths. Seven accidental deaths, 1 suicide, and 1 homicide were registered, and in 34 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 38·5 in a thousand.

Scotland.—The deaths registered in eight principal towns during the week ending January 7th corresponded to an annual rate of 27·1 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 20·3, and the highest in Edinburgh, viz., 30·3 in a thousand. The aggregate number of deaths registered from all causes was 685, including 2 from small-pox; measles, 23; scarlet fever, 7; diphtheria, 4; whooping-cough, 30; fever, 7; and diarrhœa, 18.

Bordeaux.—Six hundred and four deaths were registered during the month of December, 1887, including 102 from enteric fever.

Santiago de Cuba.—The sanitary inspector reports for the week ending January 14, 1888, that "no contagious diseases are prevalent just now. . . . Small-pox prevails more or less in the country, and the cities of Havana, Matanzas, Cienfuegos, and Manzanillo are suffering from the variolous disease in an epidemic form."

Havana.—One death from yellow fever and 70 from small-pox are reported for the week ending January 14, 1888.

Buenos Ayres.—The United States minister, under date of December 12, 1887, transmits a copy of a convention recently signed by the Argentine, Brazilian, and Uruguayan commissioners, relating to the question of quarantine along the South American shores. The convention contains eight articles, the first four of which are as follows:

Article 1. The contracting countries agree in declaring that: Exotic pestilential diseases are yellow fever, cholera morbus, and the Eastern plague; and an infected port is one in which either of the said diseases exists as an epidemic; a suspicious port is one in which isolated cases of either of the said diseases are occurring, or one which is in easy and frequent communication with or is not sufficiently protected against infected ports. An infected ship is one in which a case of pestilential disease has occurred; a suspicious ship is one which, proceeding from an infected or suspicious port, has not had during the voyage any case of pestilential disease, or one which, though proceeding from a clean port, has touched at an infected or suspicious port, or one which, during its voyage or on its arrival, has communicated with another ship from an unknown, infected, or suspicious port, or one which has had deaths from an unascertained cause or repeated cases of any kind of disease, or one which does not bring a clean bill of health from the port from which it proceeded as well as from the ports of call, or one which, though it has undergone quarantine or received special sanitary treatment in either of the contracting countries, is not furnished with an international patent of free *pratique.* The declaration of a port being infected or suspicious shall be made by the government of the declarant country at the request of the chief of the maritime sanitary service, and shall be published officially.

Art. 2. The contracting countries shall establish adequate sanitary services, and the chiefs thereof shall communicate with each other upon all matters affecting the service. A code of international regulations shall be issued for establishing uniformity in the services.

Art. 3. The contracting countries shall establish such lazarettos as may be necessary, and they shall be placed upon islands; at least one floating lazaretto shall be established in case of an epidemic; floating hospitals shall be created in connection with the fixed lazarettos, to be used for the treatment of persons attacked by exotic pestilential diseases in the ships which may arrive or are already anchored; the quarantines and sanitary measures adopted in any lazaretto of either of the three countries shall be considered valid, for the purposes of this convention, provided they be officially certified; the ports shall not be closed against any ship, whatever may be her sanitary condition.

Art. 4. A ship proceeding from foreign ports shall not be put in free *pratique* without a previous sanitary visit. The visiting sanitary authority shall thoroughly investigate the sanitary condition of the ship, and shall decide on the treatment to be applied.

Mortality Table, Foreign Cities.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM— Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	December 24.	2,260,045	951	..	....	6	....	32	4	39
Paris	December 31.	2,260,045	1,070	..	...	3	....	60	6	37
Paris	January 7.	2,260,045	1.138	..	....	5	....	33	3	48
Glasgow	January 7.	545,678	273	..	....	1	....	...	2	1
Warsaw	December 31.	439,174	204	..	....	14	....	....	10	4
Calcutta	December 10.	433,219	260	17	....	....	....	....	....	....
Marseilles	December 31.	376,000	872	..	....	4	....	34	1	66
Rome	December 3.	373,356	196	..	....	4	....	10	2	2
Palermo	January 2.	250,000	126	..	....	....	2	....	....	2
Palermo	January 8.	250,000	122	..	....	....	....	....	....	6
Belfast	January 7.	221,122	161	..	....	....	....	....	....	1
Genoa	December 31.	179,493	109	..	....	8	1	....	...	1
Genoa	January 7.	179,447	170	..	....	8	2	....	1	2
Leipsic	January 7.	170,000	70	..	....	....	....	....	1	4
Trieste	December 31.	154,500	115	..	...	10	....	2	2	6
Toronto	January 14.	130,000	19	..	....	....	....	1	....	4
Toronto	January 21.	130,000	29	..	....	....	....	....	....	1
Barmen	December 31.	108,000	39	..	....	....	....	....	....	1
Havre	December 31.	112,074	67	..	...	....	....	3	....	1
Reims	December 31.	97,903	57	..	....	....	....	1	1	4
Mayence	December 31.	65,701	39	..	....	...	....	....	....	3
Cienfuegos	January 9.	35,464	29	..	....	21	....	1	....	....
Cienfuegos	January 16.	35,464	54	..	1	41	....	....	....	....
Gibraltar	January 1.	23,631	11	..	....	....	....	....	1	....
Sagua la Grande.	January 7.	15,605	5	..	....	....	4	....	....	....

United States.

San Francisco—Small-pox.—From January 1st to 17th there were 123 cases reported. The secretary of the health department reports as follows: "On the 14th instant the steamer Gaelic arrived from Hong-Kong with small-pox on board, and seven Chinamen affected with the disease have been removed from her. The vessel will remain in quarantine for some time. It is considered that the disease is decreasing already, and with the measures taken will soon be eradicated."

Port Townsend, Wash.—The Secretary of the Treasury, upon request of the local board of health, has authorized the revenue steamer Walcott to cruise between Port Townsend and Whidby Island, and, in connection with regular duties, notify vessels from San Francisco, where epidemic small-pox exists, to enter this port and comply with quarantine requirements before proceeding into interior.

Key West.—One case of small-pox is reported, under date of the 19th instant. The patient came from Havana about the first of the month. The usual precautions have been taken to prevent the spread of the disease.

THERAPEUTICAL NOTES.

Pumiline.—This name has been given to a number of preparations made from the *Pinus pumilio*, a species of pine growing at various altitudes among the Alps. According to the "British Medical Journal," it is asserted that this species has more medicinal virtue than other pines, and the volatile oil obtained from specimens found above the snow line is said to be superior to the product of trees found in the valleys. The preparations mentioned are an essence, an extract, and jujubes. They are supposed to be useful in catarrhal and rheumatic affections.

ANSWERS TO CORRESPONDENTS.

No. 136.—It is inert.

No. 137.—Spongio-piline is made of wool and small pieces of sponge felted together. The sheet, which is about half an inch thick, is coated on one side with a flexible, waterproof material, which serves the purpose of retaining heat and moisture.

No. 138.—1. We think you had better write to the Surgeon-General of the army and the Surgeon-General of the navy. 2. We presume that a graduate of an American medical college would be allowed to practice in Great Britain, but it is doubtful if he could be so registered as to confer upon him the status of a licentiate of the Royal College of Physicians or the Royal College of Surgeons.

No. 139.—No.

No. 140.—A gas light will answer perfectly well, if you are careful to hold the test-tube far enough above the flame.

No. 141.—According to Dr. W. H. Geddings, the mean winter temperature of Aiken, South Carolina, is 48·59° F., and its altitude 585 feet.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, February 11, 1888.

Lectures and Addresses.

THE NATURE OF INHERITED DISEASE.

A LECTURE DELIVERED AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

By GEORGE G. VAN SCHAICK, M. D.,
INSTRUCTOR IN CLINICAL MEDICINE AND PATHOLOGY; MEMBER OF THE NEW YORK PATHOLOGICAL SOCIETY.

Gentlemen: At the close of my last lecture I was asked by one of you to give my views of the conditions, pathological or otherwise, entailed upon the system of those who inherit disease.

First, let us consider the mode of transmission. This is, according to the weight of evidence and of prevailing opinion, twofold: (1) We have direct transmission of a specific germ from parent to child, invariably affecting the ovum itself, and (2) transmission of a *tendency* to disease from parent to child.

The first is a distinct pathological process, proved beyond a peradventure, and of frequent occurrence. In this mode are transmitted certain forms of syphilis, some of the exanthemata, and other diseases. In fact, it is probable that any malady resulting from the development of a microbe may be directly inherited by the deposition of this microbe within the ovum. I do not doubt, for instance, that some cases of tuberculosis in which the disease is declared soon after birth are the result of this process. Cases of tuberculosis occurring in the new-born, whether general or local—such as the meningeal form—may be surmised to depend at times upon a directly infected ovum. I believe this form of heredity to be invariably rapidly shown in the child, and to take a straightforward, easily recognized course, similar, in all important points, to that occurring in the parent. Treatment, of course, may modify the march of events. A child may be directly poisoned by syphilis without showing it at birth, and we may by means of mercury prevent or retard the appearance of the specific symptoms. We should be careful, however, not to include in this class many cases which show themselves late in the offspring's life, and in a form not similar to the parental affection. Scrofulous and unhealthy children derived from syphilitic parents are not the victims of direct infection unless they show unmistakable syphilitic symptoms. They are merely the weak offspring of depraved constitutions. Not only is the theory of direct transmission of a disease-germ made certain by clinical evidence, but also by proofs gathered within the domain of natural history. It is well known to silk-worm raisers that the eggs of silk-worms affected by the disease peculiar to them, a disease of great virulence and fatality, contain the germs of the disease—a fact easily shown by microscopical investigation. Hervieux, of the Veterinary School of Alfort, in France, has reported the existence of cysticerci in the new-born of the pig, and filariæ have been found in fœtal puppies. (See Bouchut, "Pathologie générale.")

The diseases resulting from the second division in the mode of transmission demand more consideration at our hands, being the ones about which our knowledge is least. The form in which the disease passes from generation to generation, without direct infection, is one of the obscure points which science may yet enlighten. The most I can say is that a tendency to disease is transmitted. How may this tendency be defined? I would term it "a habit of the body, or of one or several of its organs or systems, leading to such a condition as will place the parts apt to be affected in the future in the most favorable state for the development of the pathological process." This tendency is the factor in the inheritance of diseases affecting the blood, the organs of special senses, the skin, the constitution, the nervous system, and the viscera. It is also the factor in the inheritance of particular malformations of various parts of the body or of its organs, and of different forms of ectopia.

The tendency to disease acquired by inheritance has been termed by Bouchut a part of the "generative impression." By "generative impression" I understand the collective impression received by the child before its birth, derived from its parents, and resulting in the renewal of family resemblance, type, tendency to disease, etc. And we know that disease-tendency, as well as family peculiarities, may be subject to atavism.

We know that tendency to disease is of a composite order. For instance, in pulmonary phthisis we know that not only is there an aptitude of the lungs to become good soil for the propagation of the tubercle bacillus, but there is often a tendency to general inflammations resulting in frequent catarrhal processes and a disposition to undue irritability of the air-passages, followed by frequent coughs, and a vicious conformation of the chest may also have been transmitted. There are other predispositions, more obscure in character, but the existence of which can not well be doubted. One of these is the tendency to increased cell-proliferation—a tendency which may lead to tubercle, as well, possibly, as to other diseases, such as epithelioma. You know that both tubercle and epithelioma are the result of the multiplication of cell-elements, differing only in form. In the one we have a gathering of cells of a low grade of vitality, terminating by caseification and subsequent breaking down, while in the other we have cells of a higher grade of vitality, attacking a highly organized tissue, and ending in a true necrosis. I think it very probable that the same predisposition frequently leads to different results, and, in point of fact, I believe that this very tendency to proliferation of cells results in epitheliomatous or tubercular processes, according to the mode in which tissues are attacked and irritated. We find scattered in medical literature a sufficient number of histories of cases in which these two diseases attacked members of the same family to allow of our concluding that the two forms of disease have some decided analogy of origin. This statement you may think disproved by the theory of the lymphatic origin of tubercle. This theory has counted among its supporters such men as Villemin, Foerster, Rindfleisch, Schüpfel, Wagner, Chauveau, and others. But I must say that I have never been able to understand that there were any anatomical facts justifying the assertion of such an origin. I believe that the cell-elements of the tissues affected by tubercle are the seat of war, that they are primarily attacked, and that against the epithelium lining the air-vesicles and the bronchioles, or against the cells forming the parenchyma of the liver or other organs, the disease brings all its forces to bear. This, in my mind, constitutes a relationship between the two diseases. (See Laboulbène, " Anatomie pathologique.")

You will see by what I have said that I am no believer in the antiquated theory that hereditary diseases are developed from an infecting, dormant nidus existing within the human body, and transmitted from parent to child. Such an idea long prevailed, but it has been abandoned by the foremost thinkers. We no longer believe that the progeny of tubercular ancestors carry about with them a storage of explosive material, which for years may lie quiescent, and suddenly exert its destructive power. As you may observe, this doctrine was a fatalistic one in the very worst form. It made practically useless all efforts at prevention by prophylaxis. With the new doctrine we can hope, with the old we can only despair. Where nothing but a tendency exists, it can be combated and vanquished; but no one could expect to cope with a virulent nest of latent poison hidden somewhere in the body.

Heredity of disease is a wide subject, and is probably of more frequent occurrence than we have any idea of, for a number of reasons. One is that we do not recognize it in some cases becase it has come by atavism, or the process of skipping one generation. Another is that a tendency to disease may be transmitted to children by parents who have the tendency themselves, but who may die of some intercurrent illness ere they have been attacked by the disease they have transmitted to their progeny. People often die of phthisis long after the birth of children who in time succumb to it also. We must also consider the fact that about one fifth of all deaths occur from pulmonary troubles chiefly due to the tubercular process; this means an enormous inheritance of disease. And when we come to think of it, we wonder that with the multiplication of the human race there is not also a multiplication of disease sufficient to antagonize all increase of mankind. I think we have good reason to believe that the tendency to disease diminishes a great deal by the process of passing through successive generations. We know that in every living organism there is a force at work, known to us as the *vis medicatrix naturæ.* This force contends as much against disease-tendency as it does against actual disease, and its efforts are productive of a diminution in the severity of any affection that runs its course during long periods and that passes through large numbers of individuals. We know, for instance, that wherever an epidemic disease appears for the first time in a given region, its effects are apt to be far more severe than in places where it has long been endemic. For this reason I believe that phthisis, as well as many other diseases, tends to become less prevalent, and that, if we can only place individuals who are likely in time to become its victims through inherited tendency in the most unfavorable conditions for the growth of the disease-germ, we shall accomplish more than we can by treating the disease after it has declared itself. The means at our hands are, generally, all those that tend to promote health. Those means are our weapons. In time we shall grow more skillful in their use, and in time our good intentions will subserve some better end than the further paving of the place Dante speaks of.

Original Communications.

THE REDUCTION OF OLD DISLOCATIONS,

WITH REPORT OF A REDUCTION BY ARTHROTOMY.*

By JASPER J. GARMANY, M. D.

In considering this subject it shall be my endeavor to notice somewhat fully arthrotomy as a means especially adapted to the reduction of old dislocations. Arthrotomy would be indicated in a recent dislocation if reduction was found impracticable and there were evidences of serious pressure upon the vessels or nerves.

When shall we consider a dislocation old? I think it is old when the tissues contused and lacerated by the dislocation have healed. The resolution of subcutaneous wounds, like those treated antiseptically, may be said to be perfected in about three weeks. From three weeks up to three months many dislocations can be reduced by extension and manipulation.

If there are no contra-indications, such as evidences of implication of the vessels or nerves, extension should be made, if possible from the bone dislocated, and the force of this extension should be measured by a dynamometer if it is greater than the strength of one person. If there is evidence of calcareous degeneration of the vessels, the extension is dangerous. Extension should be preceded by rotary movements to break up adhesions.

If the tissues prove sufficiently yielding to admit of restoration of the length of limb without undue force, manipulation may appose the articular surfaces. If certain tendons become taut, they may be divided subcutaneously with advantage. If, after several attempts at intervals of a week or more, the reduction proves impossible, I believe an early arthrotomy, with a view to reduction or excision, is indicated.

These futile attempts at reduction greatly accelerate, nay, almost determine, the extensive changes about the joint which follow non-reduction. Of course, the movements acquired in a new-formed joint produce great changes, which will be considered further on. The changes before the third month affect the soft parts chiefly, although I am aware of several reported exceptions. The rent in the capsule has healed. The muscles, vessels, nerves, and other soft parts have formed adhesions to the contiguous tissues, perhaps to the end of the dislocated bone. The articulating surface of a cavity may be filled with tough fibrous tissue, which can only be removed by means of a gouge. The cartilages of incrustation may have become altered and partially absorbed. The muscles which have been stretched have become more or less tendinous, and those rendered lax contractured. If movements have been made, a capsule of dense fibrous tissue, supported by the contiguous tissues matted together by fibrous tissue, is formed. This capsule becomes lined with a synovial (?) membrane. These changes may be insurmountable even after arthrotomy, as in Nicoladoni's case, seventy-four days, and Volkmann's, three months, after dislocation at the hip joint. In both these cases several futile attempts at reduction by manipulation and extension had been made.

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* Read before the Society of the Alumni of Bellevue Hospital, December 7, 1887.

When a dislocation has existed longer than three months, the employment of extension and manipulation is scarcely to be recommended. I will except those cases in which no attempts have been made at reduction nor attempts to regain movement, for then the impediments to reduction may be overcome.

Cook reports a case of dislocation of the femur on the dorsum ilii (two inches and a half shortening, etc.) of thirteen months' duration which was accidentally reduced, and in which recovery took place as rapidly as after prompt reduction. There had been no efforts made to reduce the dislocation. I don't believe this point needs to be enlarged upon, for the cases are numerous to be cited in its proof.

In those cases in which several attempts have been made to effect reduction the changes are proportionate to the amount of inflammation occasioned by the frequency of the attempts at reduction and the length of time elapsed since the dislocation and the efforts at reduction. These changes are the exaggeration of those already described, together with changes in the bones. The stretched tendons may become ossified and the muscular tissue entirely disappear. The articular cartilages may become absorbed, and the shape of the articulating end or cavity changed. The cavity may become filled with deposition of bone salts into the fibrous tissue, and stalactite formations may surround the deformed dislocated end. It is in this class of cases that arthrotomy should be performed to determine between reduction, after breaking down the adhesions and making an opening to the articular surfaces, and excision of the ends of the bones. Tenotomy, except in rare cases, is not to be entertained. Fracture of the bone is dangerous, and subcutaneous section by means of the saw or chisel is, I believe, more dangerous than division of the bone after arthrotomy.

Blumhardt in 1847 reduced an old dislocation of the elbow after an arthrotomy. His example has been successfully followed of late years by many surgeons.

The reductions at the hip after arthrotomy have been failures, chiefly from sepsis, but there is no doubt that successes will soon be recorded. The question arises, When shall reduction or when shall excision after arthrotomy be performed?

If the former articulating surfaces can be fitted and retained together, and these surfaces are not diseased, an excision should not be entertained except as a secondary resort.

I believe it is permissible to employ tenotomy, and also to shape the cavity or articulating end by means of the gouge or bone-cutting implements. Margary, of Turin, employed this method at the hip in a case of congenital dislocation. He says the patient died from blood-poisoning from the use of septic catgut.

Excision should be reserved for cases in which reduction is impossible, the soft parts requiring too extensive division, or where the bone is diseased. It may be that the bone has elongated as in the young when the pressure is removed, and hence requires excision.

In general it may be said that the arthrotomy should be performed by the same incisions as are best adapted to excision, since the latter operation may be required.

Morbus coxarius has followed a prompt reduction of a dislocation at the hip, and I believe is more likely to follow after an arthrotomy where excision would be necessary.

I beg your attention while I recite briefly the history of the patient I present to you:

John S., a blacksmith, aged thirty-nine years, was admitted, March 24, 1887, into the Ninety-ninth Street Hospital. Eight weeks previous to his admission he had fallen, sustaining a subcoracoid dislocation of his left humerus. He said he fell on his hand, having extended his arm to save himself. A doctor attempted reduction the same evening. At the time of his admission, examination showed a subcoracoid dislocation of the left humerus. The movement in the new joint was very limited, being restricted to less than 10°, therefore rendering the member practically useless. The patient was etherized and efforts at reduction were made by my colleague, Dr. White, by the house staff, and by myself, without success. I then ordered Dr. McGrew, the house surgeon, to make an incision as if for resection, beginning just external to the coracoid process and extending downward in the axis of the limb four or five inches. The tissues covering the head of the bone were carefully examined before being divided. The capsule was opened and the long head of the biceps muscle was severed. The coraco-brachialis and the short head of the biceps were partially divided. By means of the fingers all adhesions to the head of the bone were then examined. The capsule was found to consist of exceedingly dense, fibrous tissue, and I found it necessary to divide it almost around the entire circumference of the head of the bone. An opening was now made into the glenoid cavity and the articular surface examined. The surface was smooth to the touch, although the muscles (supraspinatus, infraspinatus, and teres minor) were closely applied to it and taut. The tissues were separated and the head of the humerus was directed through the opening until its articular surface rested against the glenoid cavity. The head of the bone tended to become dislocated and had to be held in position while the wound was stitched, drainage being provided for above and below. The operation was performed with all antiseptic precautions.

A Velpeau bandage was applied to retain the dressing and arm in position. Two days later the wound was redressed, but the drainage-tubes were retained, as the parts had been greatly contused in the efforts at reduction. Eight days later the wound was again dressed, when it was found healed, except the openings for the tubes. The tubes were removed. The Velpeau bandage was retained for a month, when passive motion was commenced. After another month the motion was quite free, being about half that of the other side. He was able to earn his living as a blacksmith.

His present condition leaves little if anything to be desired, the movements being scarcely less free than on the other side. The strength of the muscles has fully returned.

It may be of interest to state that the case reported by Burkhardt—that of a woman, aged forty-eight, with a dislocation of seven months' standing—is the only other case I have found reported as a success. In that case the great tuberosity was fractured in reducing the dislocation after arthrotomy, and the wound suppurated until the fourth week. External rotation was not recovered.

ACUTE LEUKÆMIA DURING PREGNANCY.

By JAMES L. GREENE, M.D.,
MORGANTOWN, IND.

Much was originally written by Bennett and Virchow in a controversy over a claim for priority of discovery and scientific description of this disease, and almost every one who has written on this subject since the cessation of the original controversy has gone over the entire ground. In these latter controversies the principals seem to have had little more than the part of Patroclus when the Greeks and Trojans fought over his body. Consequently there seems to be little or no need of referring to the relative merits of the claims for priority of the original investigators of this very grave ailment.

The knowledge of this dreaded disease in our possession to-day is very unsatisfactory and incomplete. Many recent and excellent authorities show a sad variance of opinion as to its ætiology, and the greatest difficulty presented to the mind of an investigator of the pathology of leukæmia is the lack of knowledge of the physiological process by which the red and white cells of the blood are formed.

It occurs more frequently in men than in women. Osler* gives the proportion as at least two to one. The account of the few recorded cases of leukæmia in women which I am able to find contains but a mere mention of its relation to the reproductive function. Cameron, of Montreal, has furnished a paper on this subject, in which he says there are four recorded cases of leukæmia complicating pregnancy, and Dr. C. W. Earle, of Chicago, mentions a case in which pregnancy occurred during an attack of leukæmia.

The object of this paper is to bring before the profession the record of two cases occurring during pregnancy, together with the favorable results from radical treatment in one case. The patients whose cases I shall give presently have come under my care during the past year and a half, and are both from one family. I give also herewith some facts which I have gleaned from the members of the family relative to the case of a sister of the patients here mentioned, which case occurred before I became a student of medicine, and had a fatal termination:

Case I.—Mrs. S., a primipara, aged twenty-one, height five feet five inches, weight one hundred and seventy pounds, first came under my care for treatment on November 25, 1886. She was of robust constitution, and her health previous to her marriage had been perfect. She and her mother both informed me that she had never been ill, or required medicine of any kind during her entire life previous to her marriage, which occurred April 12, 1886. She conceived about June 13th. The "morning sickness" following conception was very severe and troublesome. She also had an attack of malarial fever of the remittent type in the latter part of August. During this attack of illness there was an attempt to abort, which, however, yielded to the usual remedies.

Following the attack of fever there was nothing of any moment in the case until November 25th, when the lady came to my office accompanied by her husband. After many interrogatories, she being very reticent, I found that she had been losing strength and becoming less able to perform her household duties since about October 15th. Her husband insisted, however, that she had never been thoroughly well since the attack of fever, and that he had importuned her many times to consult a physician, which she had persistently declined to do, regarding her ailment as only a natural sequence of pregnancy, a subject upon which she was painfully modest.

She was *profoundly anæmic.* From the ruddy glow of perfect health, attendant upon a quiet country life, which she had enjoyed previous to her marriage, her skin was transformed to one of pearly whiteness, smooth and waxy. The lips, gums, and tongue seemed bloodless. The general frame was flabby rather than wasted, which condition continued to the end. The pulse, at the rate of 100 in a minute, was large, but remarkably soft and compressible, and occasionally seemed to have a slight jerk or intermission. I failed to detect anæmic murmurs either in the heart or in the great vessels. In fact, repeated auscultations at various times during her illness revealed their presence but once.

The gastric symptoms were prominent and of considerable inconvenience. The food oppressed her and gave an uncomfortable sensation of fullness; the appetite at this time was not diminished, and the evening meal, she informed me, was sometimes ejected, not from nausea, but that by the evacuation of her stomach she obtained relief from the distressing sensation of fullness. There had been no diarrhœa at this time. The exhibition of a pill of aloin, belladonna, and strychnine, three days later, by another hand than mine, brought about a train of symptoms in this regard very much to be regretted.

The nervous symptoms were pronounced. She had a headache each day until ten o'clock A. M., and was troubled by continual dizziness. *Tinnitus aurium* was a constant symptom. She complained that she could "hear some one continually pounding beef." She also complained of occasional attacks of numbness in her left arm and leg. She was not certain about her vision, and, unfortunately, I am not prepared to scientifically test the visual power or to examine the retina. Later developments showed a marked failure of vision.

She had had epistaxis at various times since September 15th.

By a careful palpation I detected an enlarged spleen, and was inclined to the belief that the liver overspread its normal bounds. There was dyspnœa upon the slightest exertion. No examination of the blood was now made, but with these facts, and a knowledge of the fact that a younger sister of the patient had died of leukæmia, I made the diagnosis. An unfavorable prognosis was given and a consultation advised. Arsenic, in the form of Fowler's solution with quinine, was given in the mean time.

On November 30th I saw her again with Dr. E. B. Willan, of Trafalgar, Indiana. There were no new developments in the case except an increase of the dyspnœa on exertion, and an increased elevation of temperature. The thermometer registered 102° F. Dr. Willan suggested iron and electricity, which were added to the treatment, leaving off the quinine except in antipyretic doses when required. The advisability of producing a premature labor was discussed and decided against.

The treatment was assiduously carried out, but the patient lost ground rapidly. The appetite failed, slight œdema of the feet and face was discerned, the dyspnœa became more troublesome, and the temperature was constantly elevated with an evening exacerbation, at several times reaching 104·2°. Dr. Payne, of Franklin, was called on December 7th. He advised palliative treatment only, fully confirming the diagnosis. The enlarged spleen was now easily detected; an examination of the blood on the following day showed the white and red corpuscles in the proportion of 1 to 20 (about). The gravity of the symptoms continued to increase. The dyspnœa was now of the most distressing character, recumbency being impossible. The œdema increased until the extremities were enormously distended. Ascites did not appear, however. Diarrhœa and vomiting, which refused to yield to any treatment, were added to the symptoms.

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* Pepper's "System," vol. iii, p. 909.

On December 18th, at four o'clock A. M., I was called to her in haste. I found her already in the beginning of the second stage of a premature labor. An examination showed the child presenting by the breech. At five o'clock the child was born, the forceps being required to accomplish the extraction of the head. There was a slight amount of hæmorrhage, the blood scarcely coloring the linen. *The blood from the divided cord was bright red.*

Stimulants and restoratives were employed, and she rallied well from the fatigue, which was extreme. Her condition improved until 3 A. M. of the following day, when collapse came. I was hurriedly summoned, but found her moribund, and nothing could be done. She died at 9 A. M., December 19th, twenty-four days from the time she first consulted a physician, and within six months from the onset of the disease.

CASE II.—Mrs. C., aged nineteen, primipara, a sister of Mrs. S., whose case I have just given, was first brought under my notice on January 1, 1887, at which time I visited her at her home, and obtained the following history: She had been a healthy and vigorous girl, enjoying the life of a farmer's daughter until her marriage on September 8, 1886. She had never had any irregularity of her menstrual function, but was at this time suffering from what she regarded as a suppression of her menses. She was troubled with chilliness, anorexia, and thirst, with a slight elevation of temperature. I prescribed an emmenagogue, which was, however, inefficacious. The case then passed from my mind until March 22d, when I was again called to the residence. I now learned that her menstruation had not returned, except by a very slight "show" on February 3d; that she was troubled with constant nausea and vomiting; that chilliness, followed by fever, had been occurring each day for about ten days. The temperature was 102° F.; the pulse 110, and of good volume, but compressible; respiration, 25 in a minute. She had dyspnœa to a degree that seriously interfered with the performance of her household duties; dizziness and *tinnitus aurium* were a source of constant annoyance. She was pale and anæmic. I prescribed Fowler's solution, with elixir of pepsin, bismuth, and strychnine. On the day following, a microscopic examination of the blood was made, which showed a pronounced increase in the number and proportion of the white cells. The treatment was persistently followed, but no relief from the symptoms was obtained; on the contrary, they were augmented.

On April 5th, slight œdema of the feet was discerned, and, as the other symptoms were increasing, with no benefit being derived from medication, I decided that now, if ever, the production of an abortion would be justifiable.

Dr. R. C. Griffitt, of this place, was called in consultation. He confirmed the diagnosis, and concurred in the plan of treatment. The ovum was accordingly disturbed by passing a uterine sound well up to the fundus uteri. This was repeated three times on different days. On April 12th the ovum was expelled piecemeal. Antiseptic injections were used for three days, when the patient was on her feet again.

The interesting part of the case was the watch for improvement. The gastric disturbance, fortunately for the patient, improved first and rapidly; the dyspnœa upon exertion disappeared; the color slowly returned to the ears, lips, and gums; strength and spirits returned, and I dismissed the case June 1, 1887.

The base of the medication in the case was Fowler's solution, which was given regularly until the case was dismissed.

The case of the sister of these patients, Miss C., an account of which was furnished me by the father and mother, occurred in 1881–'82. She had been of rugged constitution with perfect health until the age of puberty, which occurred at thirteen. About the time of the establishment of the menstrual function she had measles, upon recovery from which she had dysmenorrhœa, and at times profuse menstruation. These symptoms continued until December, 1881, she then being past fifteen years of age, when the symptoms of leukæmia, delineated in the foregoing cases, appeared. The march to a fatal termination was slow but sure, and death occurred August 2, 1882, after weeks of the most distressing weariness, dyspnœa, and general anasarca.

These cases are interesting from several points of view.

1. The family history of both father and mother is of the very best character.

2. In two cases the beginning of the disease dates from conception, and in one from a disturbance of the menstrual function.

3. Improvement and recovery in one case followed immediately upon the termination of the pregnancy by artificial means.

With these facts before them, does any one doubt that the true ætiological factor in two cases was pregnancy, in one a disordered menstrual function; or that the artificial termination of the pregnancy in one case was the curative agent?

December 15, 1887.

A CASE OF HEMICHOREA RHEUMATICA.

By FRANZ FOERSTER, M. D.

MRS. N., seventy-six years old, always enjoyed the best of health until three months ago, when she was forced through circumstances to give up her comfortable rooms and to take rooms in the basement of the same house. Since that time she has complained of rheumatic pains in different joints of the body, not severe enough to call for medical aid. A month ago the pain appeared most severe in the left shoulder, and did not cease after using several household remedies. On December 8th, while engaged in rubbing the aching shoulder, the patient remarked a peculiar twitching movement of the fingers of the right hand; the motions became vigorous, extending to the arm, and in a very short time the whole right side of the body was involved.

At this phase I was called in. I found the patient perfectly rational, but unable to control the motions even for the shortest time. The movements were continuous, rhythmical, and quite vigorous. The arm was in a state of the greatest excitement, the motions performed being, in alternation, flexion and extension, pronation and supination, giving in all the impression of a well-intended movement. The leg was less active, being partly flexed and performing a swinging motion. The muscles of one side of the face were also involved, the face being thereby drawn into grimaces, while the tongue was in constant activity, interfering considerably with speech. The muscles of the trunk were also affected, causing a perpetual shifting of the position of the patient and a constant rising and falling of the right shoulder.

The condition of the patient was a most pitiful one; she was constantly asking that something might be given her to relieve the state she was in. A hypodermic injection of morphine, gr. $\frac{1}{4}$, and atropine, gr. $\frac{1}{100}$, had no effect in that direction. Codeine, gr. $\frac{1}{8}$, and potassium bromide, gr. 10, repeated every two hours, were likewise ineffective, and only after several large doses of morphine was I able to give her rest for a short time. During the short sleep the motions ceased altogether, but were resumed with the same vigor on her awakening. On the third day the incessant activity and the imperfect nutrition were showing their weakening effect on the patient, and she was becoming more and more exhausted.

On the fourth day Dr. Peabody had the kindness to see the patient with me in consultation, and, the uselessness of morphine and potassium bromide being well established, he proposed chloral hydrate to be given in ten-grain doses every two hours, with due precaution. After the first two doses a revolution took place in the case, the patient fell into a deep sleep of several hours' duration, and when she awoke the motions had lost their vigorous character. Observing this favorable change and having in mind the flattering recommendations which von Ziemssen gives of chloral hydrate in chorea, I determined to press the use of the anæsthetic and bring about a state of affairs somewhat similar to that in Gairdner's case, in which chloral was given by mistake in a very large dose, and after the resulting intoxication was over the patient had lost the chorea entirely. The ten-grain doses were repeated, consequently, just as often as the patient had recovered from the effect of the dose previously taken; she was kept in this manner perfectly quiet and contented, passing away the time mostly in a light slumber. The nutrition did not suffer any under this treatment, and the violence of the attacks was decreasing visibly. When two drachms of the drug were taken, the patient was even able to control herself altogether, and it was only on special nervous excitement that a few choreic movements occurred. On the twelfth day after the attack the patient was in her ordinary health, with the exception of various abrasions and contusions and the articular rheumatism above mentioned.

On examination of the heart, I found a slight systolic blowing sound over the apex, the area of the heart-sound not increased. The urine contained during the attack a small percentage of sugar and an increased amount of urea. The temperature was slightly elevated, while the pulse varied from 70 to 100.

The points of most interest in this case I consider to be:

1. The advanced age of the patient (seventy-six years), she having been in perfect health until articular rheumatism set in.

2. The rapid invasion without a prodromal state, and the rapid course the affection took despite the violence of the same.

3. The apparently clearly established connection of articular rheumatism and the resulting endocarditis with the choreic attack in this case, being affirmative proof of the correctness of the observations of Sée, Hughes, Kirks, and others describing chorea to be often the outcome of an embolic process, due to the carrying by the blood-current of small particles of fibrin to certain nerve-centers.

4. The great advantage derived from the use of chloral hydrate. Although the same may have seemed to be specially contra-indicated on account of the advanced age of the patient, it did not produce any alarming symptoms whatever.

A CASE OF COMPOUND COMMINUTED FRACTURE OF THE TIBIA AND FIBULA.

By GEORGE PURVIANCE, M. D.,
SURGEON, UNITED STATES MARINE-HOSPITAL SERVICE.

Charles J., aged nineteen, a native of New York, was admitted into the U. S. Marine Hospital at the port of Cincinnati, on the 18th day of January, 1887. At the time of his admission he was suffering from a compound comminuted fracture of the tibia and fibula, about two inches and a half above the ankle joint, with extensive laceration and contusion of the soft parts from the base of the toes to the knee. The injury had been caused by having his foot and leg crushed between the ends of two cars of lumber. From the extensive injury to the bones and soft parts, his condition was very critical, and the question of saving his life was the first to be considered.

January 18, 1887.—The day he was admitted into the hospital a temporary dressing of plaster of Paris, in the form of a stirrup-splint, was applied.

19th.—Pulse, 100; temperature, 39·5° C. (103° F.); appetite poor; sloughing considerable; the leg was washed, and a flaxseed poultice applied.

20th.—Pulse, 104; temperature, 40° C. (104° F.); there were nausea and vomiting.

21st.—More comfortable; pulse, 92; temperature, 38·4° C. (101° F.).

22d.—On account of the extensive sloughing it was impossible to continue the plaster dressing on the outer side of the leg, and one half of the splint was then removed, and the leg allowed to rest on the other half, and a poultice of flaxseed applied to the exposed side of the leg.

23d.—General condition about the same; discharge very profuse; carbolized dressing used, changing every three hours.

24th.—About the same; continued the same treatment.

25th.—Considerable hæmorrhage from the vessels of the inner side of the leg occurred in the night. I was called by the night nurse, and immediately removed all dressing, and the hæmorrhage was checked. No fixed dressing could be used, and the leg was placed in a fracture-box containing bran, but, on account of the extensive injury to the soft parts, it was impossible to make sufficient pressure on the leg to retain it in proper position for repair, and an amputation below the knee seemed to be demanded, and it was decided to perform the operation at once, but, upon removing the leg from the fracture-box and thoroughly cleansing it, a dark streak was discovered extending from the upper edge of the internal wound to the knee joint, indicating that the sloughing process might extend to this joint. For this reason it was deemed best to delay an operation for a few days, and thus prevent the necessity of a second amputation at a point higher up.

On account of the extensive sloughing of the soft parts and the comminuted condition of the bones, it was impossible, by the use of the ordinary appliances, to secure the quiet necessary for the union of the bones and the repair of the soft parts. In order, therefore, to obtain such rest and quiet as were necessary, a more suitable dressing had to be provided. It was finally decided to make a splint of tinned iron wire netting or gauze with one-eighth-inch meshes. A piece of the proper size was obtained, reaching from beyond the foot to the middle of the thigh, and, after carefully molding it over the leg of another patient, it was applied. A perfect cradle was thus formed. The cradle was then suspended to a piece of wood three feet above the bed, and the leg allowed to swing, the movement being entirely in the hip joint. Equal pressure was obtained by proper adjustment of cords attached to the wire cradle, and to a piece of wood at intervals of about two inches.

The small size of the meshes of this wire netting and the equal pressure prevented any irritation, and the circulation of the leg was undisturbed. This dressing admitted of the most perfect and thorough cleansing of the leg by daily douching with an abundance of carbolized water. For this purpose a large bucket of water was suspended sufficiently high above the bed to obtain the required force, a long rubber tubing acting as a siphon, and the water allowed to play through the meshes upon every part of the limb. The wounds were afterward dressed with carbolized vaseline, applying this dressing either outside or inside of the wire netting.

The essential feature of this dressing or splint is, that while it is immovable it is also open, and while perfect cleanliness is easily obtained and a free circulation of air permitted, there is absolutely no movement of the fragments upon each other, though the entire limb may move at the hip joint. As an evidence of how perfectly tolerable this wire netting is to parts denuded of skin, I would state that at several points the wire came in contact with such surfaces, and granulations grew freely through the wire, and to such an extent that it was necessary to reduce them with nitrate of silver.

January 25 to 31, 1887.—Nothing worthy of note occurred. Pulse ranging from 88 to 100. Temperature from normal to 38·5° C. (101·2° F.). Continued washing and dressing twice daily.

February 1st.—Wounds granulating nicely.

2d.—Slight pain in the heel complained of.

3d to 28th.—No bad symptoms; general condition improving; leg doing well.

March 1st to 10th.—Patient very comfortable.

11th.—Patient complained of pain over the inner ankle; an abscess forming.

12th.—Abscess opened and discharged about 100 c. c. of pus.

13th to 19th.—Patient very comfortable.

20th.—The leg was removed from the wire splint, and upon a careful examination it was found that there was firm union of the bones, and the soft parts were in good condition. The leg was then placed in a fracture-box, in bran. Two small pieces were removed from the seat of fracture. After the leg had remained in the fracture-box a short time it was taken out and the patient allowed to sit up in a roller chair and move about the ward. From this point the patient continued to improve, and I consider him recovering with a good and useful limb. He is now walking about without the use of even a cane.

Phthisis and Contagion.—"In an article in 'La clinique' on the 'Contagiosity of Tuberculosis,' by MM. Destrée and Slosse," says the "Lancet," "it is stated that from inquiries and observations made in Dr. Desmeth's wards during the present year it was found that, of fifty patients suffering from tuberculosis, contagion could be regarded as an undoubted ætiological factor in twelve, heredity in thirty; no cause could be traced in the remaining eight. The two factors, the authors say, are frequently present, and it is difficult to determine to which of them the preponderating influence is to be ascribed."

THE PREPARATION OF SURGICAL DRESSINGS BY STERILIZATION WITH HEAT.

ANTISEPTICS AS USED IN THE WOMAN'S HOSPITAL, BROOKLYN, N. Y.*

By CHARLES N. DIXON JONES, M. D.,
SURGEON TO THE HOSPITAL; FELLOW OF THE BRITISH GYNÆCOLOGICAL SOCIETY, ETC.

Gentlemen: It is no longer an hypothesis, but a definitely settled scientific fact, that suppuration can not be caused by chemical irritants; and it can be clearly demonstrated that wherever there is the formation of pus, micro-organisms have been at work. To paraphrase the law of Virchow, without the action of living bacteria there can be no suppuration.

We may go further and state that certain micro-organisms have been proved to be the *cause* if not the actual *materies morbi* of the greater portion of diseases which affect the human race. To the medical man the study of the micro-organisms concerned in these processes becomes a subject of paramount interest and importance.

As practical sanitarians and surgeons, it is desirable to know that the favorable conditions for the growth and development of disease-producing bacteria are dead organic matter, a limited supply of oxygen, water, and salts. And hence it follows that scrupulous cleanliness, effectual drainage, perfect ventilation, with copious supplies of sunlight, are of the utmost importance for all places of habitation, and especially hospital wards and sick-rooms.

There would soon be an end to all animal life but for the domination of physiological energies and the greater resistance offered by living tissue to the inroads of these parasites, which present a striking "resemblance to beasts of prey in that they first kill and then devour."

It is thus seen that every cause which tends to weaken the physiological force of the human organism, which reduces the vitality, prepares the way for a "fatal assault by swarming multitudes of pathogenic bacteria." Numerous experiments, extending over a period of several years, have been made by different observers, in order to determine the ætiology of the pus-forming process in man. Before bacteriological science had reached that perfection of method which it has now attained, such experiments as those of Councilman and others seemed to show that the simple introduction of irritating substances into the animal tissues was sufficient to set up a process of inflammation followed by suppuration and general infection. Klemperer and Scheuerlin, thinking that the results obtained by other observers might be due to imperfect sterilization of the skin of the animal experimented upon, performed a series of experiments, employing a more perfected technique, and both came to the conclusion that no suppuration would occur without the presence of micro-organisms. These observations have been confirmed by Straus, Becker, Chauveau, Krause, and Ruys.

Dr. Herman Knapp, in an admirable paper read before the Academy of Medicine in December of last year, shows that fermentation and putrefaction are always dependent upon the action of living bacteria. But the question of the parallelism of suppuration with the other two processes is the principal topic of the author's studies, which he experimentally investigates under three heads: 1. Does traumatism of any kind produce suppuration? In answer to this question he says: "In extraction of cataract (in rabbits, of course) I have purposely bruised and lacerated the iris, evacuated almost all the vitreous, then stirred up the rest with a platinum needle that had been previously brought to a glow, and finally scratched with the same needle the ciliary processes in every direction, yet no suppuration ensued, whereas the smoothest and most cautious operations were invariably followed by suppuration when the wound was contaminated in some way by pyogenic fungi." From this and other experiments he concludes that mere traumatism never causes suppuration. 2. Do foreign bodies as such cause the formation of pus? Foreign bodies introduced antiseptically into the anterior chamber of the eye never caused inflammation and suppuration. In answer to the third question, Are there any kinds of chemical agents that cause suppuration? he reviews the experiments of other investigators, and then relates a series of experiments of his own where chemical irritants were introduced with great precautions into the anterior chamber and under the skin, completely confirming the results of other investigators and concluding that suppuration in every case depends upon the action of living microbes. In this way the parallelism of the three processes—fermentation, putrefaction, and suppuration—is established.

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* Read before the Section in Surgery of the New York Academy of Medicine, January 9, 1888.

Dr. Harold C. Ernst, in a most interesting and convincing paper, relates the results of a series of some forty inoculation experiments extending over a period of a year or more. In these experiments pure cultivations of seven different forms of bacteria were used. Inoculations of pure gelatin cultivations of the *Staphylococcus pyogenes aureus* injected into a healthy guinea-pig produced death in twelve hours, and so in every case the experiments indicated that the virulence of these pathogenetic organisms was just as great at the end of a year, and after passing through a large number of generations, as when taken from their birthplace; and he concludes that no form of suppuration in man is unattended by bacteria. And lastly there are the experiments of Prudden on the ætiology of ulcerative endocarditis; the injection of *Staphylococcus pyogenes aureus* into the blood, combined with chemical or mechanical irritation of the valve or the endocardium, almost invariably produced ulcerative endocarditis.

Brassowski has corroborated the investigations of previous observers in a series of observations made at Mikulicz's clinic, and found that the *Staphylococcus aureus* and *albus* and *Streptococcus pyogenes* are the principal organisms found. It is usually supposed that in wounds healing by primary union and free from suppuration none of these organisms would occur. This observer has examined the secretions of wounds classed as strictly aseptic where primary union occurred, and arrived at the following conclusions: Under antiseptic iodoform dressings only a part (one fifth) of the wound remains quite free from micro-organisms. Result, primary union. In a portion (one half) the *Staphylococcus albus* may be present (in small numbers), and two thirds of these heal by primary union; in the other one third a slight suppuration occurs. In nine cases the *Staphylococcus aureus* and in two the *Streptococcus pyogenes* occurred. Both cause certain suppuration, but by suitable drainage from the start this may be limited to the vicinity of the drain openings.*

The recent investigations of Dr. John E. Weeks, published too late for incorporation in this article, confirm the foregoing statements.

Nélaton, who was counted among the most successful operators, was in the habit of saying that the man who discovered a method of preventing purulent infection would deserve to have erected *in his honor* a statue of gold.

"Lister † first taught us to apply systematically and accurately a method which would insure for our wounds protection against the hordes of intriguing microbes, and, although his particular method has been simplified and superseded in other countries, the underlying principles remain the same, and subtend all the modifications of the improvers."

The term "Listerism" or "antiseptics" has undergone all manner of misrepresentation and abuse. In a recent article I find it thus erroneously described:

> "Listerism, then, is founded on the hypothesis that ordinary atmospheric air contains germs or seeds of disease, which, falling upon the field of operation, develop there, and in that development are answerable for the majority of the unsuccessful results of surgical practice. To prevent that development there was instituted the practice of charging the air surrounding the patient, and especially the field of operation, with a substance which was supposed to have the effect of destroying, or at least of neutralizing, the influence of those germs. As you are all aware, the substance finally selected was carbolic acid. This was employed in the form of a spray to play upon the wound, and of a solution for the hands, instruments, and sponges, in the proportion of 2½ per. cent., or 1 in 40."

This no more constitutes antiseptics than the ability to successfully extract a corn constitutes a surgeon.

It is the fashion of the day to rail at antiseptics and cry for cleanliness; it should be remembered that this is merely playing upon terms. Ordinary cleanliness is not asepsis; it is merely an attempt to obey the great moral precept. This has been conclusively demonstrated by Kümmel. Ordinary washing of a part does not give an aseptic surface. If a few scales of the surface epithelium are removed from a part of the skin thus prepared and placed in a cultivation medium, colonies of one or more species of bacteria will develop, and pyogenic forms are not infrequent. "Scientific antisepsis is an exalted degree of cleanliness, but this exalted degree of cleanliness can only be reached through scientific antisepsis."

What chemical purity is to the chemist, and sterilization to the bacteriologist, so is surgical cleanliness or antisepsis to the surgeon.

There is a wide field for research in the determination of the real effect of disinfectants and antiseptics. The subject is so beset with fallacies, leading in some cases to totally erroneous conclusions, that it is not surprising that one meets on all sides with conflicting statements.

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* "Wien. med. Woch.," "An. of Surg."

† Morris.

According to the investigations of Koch, the salts of mercury, and especially the chlorides, prove most valuable when heat is not permissible, though their poisonous nature, and the fact that the chloride is sometimes changed into inert calomel, is a drawback to their indiscriminate use.

Herroun thinks the value of bichloride of mercury much overrated, as he has cultivated ordinary septic bacteria in albuminous filtrates containing 1 in 2,000. It is precipitated by albumins if used of greater strength, and is readily converted by the sulphur of albuminous bodies into inert mercuric sulphide.

Koch* has also tested the value of hot air and steam in the destruction of bacteria and their spores. Rolls of flannel with anthrax spores and a thermometer wrapped up inside were subjected to steam, and the results compared with the effects obtained in hot air.

Thus, in hot air, four hours' exposure to a temperature of 130° C. brought the temperature inside the roll to 85° C., and the spores were not destroyed; on the other hand, exposure to steam under pressure at 120° C. for an hour and a half raised the internal temperature to 117° C., and killed the spores. By such experiments the superior penetrative power of steam-heat was established.

Parsons and Klein have shown that complete penetration of an object by steam-heat for more than five minutes is sufficient to kill all bacteria.

Dr. Sternberg has recently published an exceedingly interesting paper upon the heat death-point of bacteria. He concludes that a temperature of 100° C., maintained for a period of five minutes, destroys the spores of all the pathogenetic organisms tested (about forty varieties). Most organisms are destroyed at a temperature of 62° C.

In this connection it is important to refer to the conclusions of Dr. Fenger in a recent report of a series of investigations:

> "What influence the asepsis of the material has on the results of the operations as to death or recovery is a question far beyond the scope of these investigations. It would require a large statistical material of well-observed cases, and more work than could be done by one observer. But it may be safe to conclude that it is desirable to work through an abdominal operation with perfect asepsis everywhere, if such a thing is possible. The above investigations have shown that such perfect asepsis can be attained. Thus, if we are ignorant of the extent of danger from non-sterile material, we are hardly justified in trusting to the innocence or innocuousness of such an uncertainty, while we can have the asepsis of the material an absolute guarantee against the dangers of infection."

The methods of the bacteriologists have made it possible for us to determine with absolute certainty whether the materials used in our operation are sterile or not. By means of cultivation media we may easily determine (1) the condition of the atmosphere in our operating-room, (2) the aseptic condition of the hands, (3) sponges, (4) silk catgut, (5) instruments, etc.

I here present eight cultivation tubes, which were prepared as follows: Previous to two operations performed about a week ago, pieces of the sponges, silk, and catgut to be used were cut off and placed in sterilized tubes; these were carried to the laboratory of the New York Polyclinic, and were carefully placed by Dr. Syms in sterilized peptonized beef gelatin. As you perceive, bacteria have developed in the tube containing a piece of sponge removed at the close of the operation, and in one of the tubes containing a piece of silk; the others have remained sterile. Under the circumstances, the experiments have been too few to give positive conclusions, but they illustrate what may be accomplished by this method. The time at my disposal has been too limited to go into any extended investigation in this direction, but I hope to still further pursue this interesting and practical line of work.

The use of heat as a sterilizing agent by the bacteriologist in the preparation of his pure cultivation, and the uniform result which attends his experiments, has attracted the attention of some of the leading surgeons of Europe, and suggested to their minds that this agent might be employed in the preparation of their antiseptic dressings.

Dr. Robert F. Weir, who has perhaps done more than any other surgeon in New York to popularize antiseptic methods, in a recent lecture referred to this agent as a germicide possessing advantages above the others in "safety, cheapness, and accessibility." You are all familiar with the disadvantages and defects of the dressings prepared with carbolic acid and sublimate. I therefore desire to describe, in the brief space of time allotted to me, the apparatus, and a method of preparing a form of dressing which is intended to overcome, to a certain extent, some of the difficulties with which we ordinarily contend. Neuber was the first to attempt a systematic method of aseptic wound-treatment. Believing that all wound-diseases are due to the action of germs, he seeks to avoid their influence by an improved hospital hygiene, rather than by disinfection with a strong chemical solution. The operation-rooms are especially constructed with a view to cleanliness and drainage. The air admitted to the operation-room is sterilized by first passing it through a furnace and then a cotton filter.

The instruments, sponges, and dressings are sterilized by heat. The hands and region of operation are cleansed and sterilized with a 1-to-1,000 sublimate solution. Only sterilized water is used for irrigation. By these means he hopes to gain an aseptic healing of large operation wounds without drainage. It can hardly be doubted that a wound kept sterile without the lavish expenditure of 5-per-cent. carbolic or $\frac{1}{10}$-per-cent. sublimate solutions will heal more kindly than when these chemicals are used, but, as Nussbaum well says, the aseptic treatment of a wound is an ideal realized with great difficulty, the sterilization of a wound still more difficult, and a break in a single link of the chain will destroy the whole. On a recent visit to the Bürger Hospital, Strassburg, I was told by Professor Luecke that all the dressings used were simply sterilized and not impregnated with any chemical whatever, and he showed me an elaborate apparatus for their preparation. Here the most rigid aseptic wound-treatment is conscientiously followed

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* Cruickshank.

—a circumstance which most certainly has no small share in the production of the wonderful surgical results reported from this clinic.

The wonderful results of thorough and intelligent antiseptic precautions are perhaps nowhere better shown than in Professor von Bergmann's clinic, in Berlin. All those engaged in the operation are dressed in clean white gowns, and the most careful washing and disinfection of hands is observed before every operation. All the gauze employed for dressings is sterilized by means of steam-heat at a temperature of 212° F. This is prepared as follows: After freeing from grease it is placed in a steam sterilizer and exposed to the influence of flowing steam at the temperature of 100° C. for a period of fifteen to thirty minutes; by this means it becomes perfectly sterilized. This sterilized gauze, without further treatment, is used for dressings in all but the larger operation wounds, and small tufts are used instead of sponges. In the more serious operation, where profuse secretion is apt to occur from the wound, it is thought best to obtain whatever advantage may be derived from the impregnation of the gauze with corrosive sublimate, as all the operations are performed in the presence of from two hundred to three hundred students who come directly from the anatomical rooms. During the operation the wound is irrigated with a 1-to-2,000 bichloride solution, except in operations on the abdomen, the pleural cavity, the mouth, rectum, and bladder, where 1-to-1,000 salicylic acid or 1-to-200 boric acid is employed.

This convenient little apparatus, here shown, which we owe to American ingenuity, known as the Arnold automatic steam cooker, will be found indispensable to the surgeon.

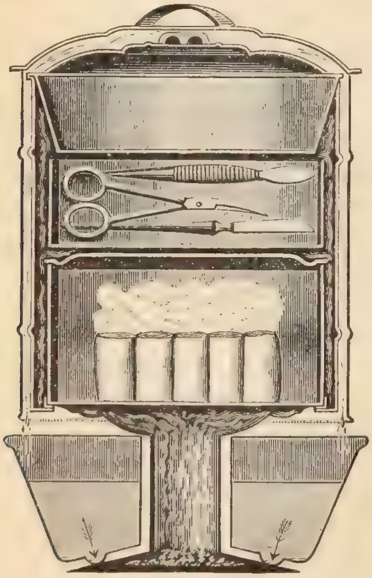


FIG. 1.

The sterilization is done by steam under slight pressure, which is generated very rapidly in the small, thin vessel under the pan. The pan is simply a reservoir to keep the steam generator supplied with water as it boils away. The steam passes up the tube into the drum. In this the perforated receivers or wire baskets are placed and completely surrounded with live steam; in this way gauze, sponges, instruments, and silk are sterilized at a temperature of 212° F. without exposure to air or water. The steam, instead of escaping into the room, is caught by a receiver and condensed, and flows back into the supply reservoir.

With an ordinary Bunsen burner the water boils in less than five minutes, so that in a period of twenty minutes all the materials for an ordinary operation may be prepared.

In private practice the sterilizer may be placed on the cooking range, or a kerosene-oil stove can be used. I ordinarily place the apparatus on a stove near the operating-table, so that during the etherization of the patient my materials are being prepared. When the patient is fully anæsthetized, the instruments and silk are removed from the sterilizer, and the dressings left within until needed.

I also exhibit a more complicated apparatus which is a modification of Koch's sterilizer (Fig. 2). It consists of a cylindrical vessel of strong tin plate, about half a metre or more in length, 25 ctm. in diameter, jacketed with thick asbestus to prevent loss of heat, and provided with a conical cap. The lid is also covered with asbestus, which is perforated at the apex to receive a thermometer. Inside the vessel is an iron grating or diaphragm about two thirds the way down, which divides the interior into two chambers, the upper or steam chamber and the lower or water chamber. A gauge outside marks the level of the water in the lower chamber; this should be kept about two thirds full. The apparatus stands on three legs and is heated from below with three Bunsen burners. When the thermometer indicates 100° C. the lid is removed and the dressings are lowered in a basket by means of a hook and string and the lid quickly replaced.

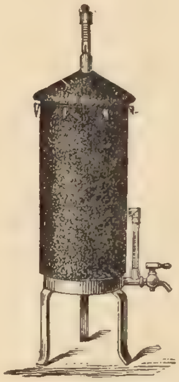


FIG. 2.

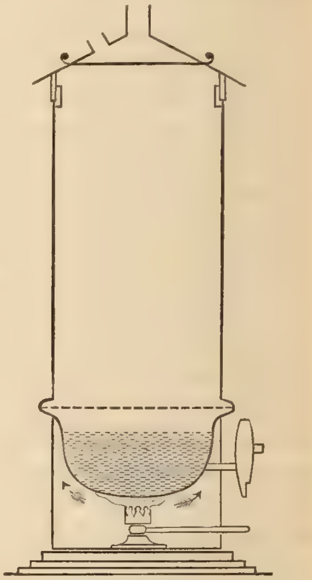


FIG. 3.

It requires twenty-seven minutes for the thermometer to indicate 100° C. with five pints of water in the receiver, and another fifteen minutes to completely sterilize the material placed within.

I believe the ideal apparatus to be one constructed on this model but made of riveted copper so that the water can be drawn off and the material dried at a temperature of 212° F., as indicated in the diagram (Fig. 3).

On removal from the apparatus the dressings dry on exposure of two to three minutes to the air. Or they may be placed in a drying oven for a few minutes.

Antiseptics in Abdominal Surgery.—Some few years ago Wegner made the remark that he and his contemporaries had doubtless all been reared in the fear of the Lord and the peritonæum, but now the peritonæum had ceased to be a surgical "*noli me tangere.*"

I would be the last to decry the marvelous progress which abdominal surgery has made under the influence of antisepticism, yet I believe that our antiseptic solution can not be used in abdominal surgery with that perfect freedom which has been so efficacious in preventing surgical infection in other classes of operations. Here the enormous absorptive power of the peritoneal cavity dominates the scene. In looking over the records of surgical operations, the deaths from mercurial poisoning are not a few. A recent writer says: "To meet this evil I have gradually diluted my spray and solutions, so as to reduce the whole question to one of cleanliness, and, I am happy to say, with the effect of very greatly adding to the success of my ovariotomy work." While I can not indorse this practice, yet it has been my endeavor during the past year or so to get along as far as possible without the use of carbolic acid and sublimate during the progress of an abdominal operation, and with the result of making the convalescence of the patient more normal in every respect. To make myself more clearly understood, perhaps I can not do better than give a description of antiseptics as now practiced at the Woman's Hospital, Brooklyn. All efforts are directed with scrupulous care to the disinfection of the instruments and person. The sponges are prepared according to the method described by Dr. Weir, and are used but once. Recognizing and fully appreciating the difficulty of securing at all times the intelligent co-operation of assistants and nurses, the number of assistants who touch anything in connection with the operation is limited to one. All instruments are scrubbed with a brush and soap before and after each operation. Previous to each operation they are placed in the sterilizer for fifteen minutes and then transferred to boiled water. All towels and silk used about the operation are sterilized by boiling. The vessels and basins used about the operation, consisting of glass or granite iron ware, are partially filled with water and placed in an oven for a period of two hours. The water used for sponges and irrigation is boiled and then cooled in covered vessels. The region of operation is washed, shaved, and then cleansed with a saturated solution of iodoform in ether. The room used for the operation is thoroughly cleansed and fumigated before each operation.

This hospital is the first to have a separate building devoted exclusively to abdominal surgery. This pavilion is separated from the main building, not by a space of a few hundred feet, but by a distance of two miles, so that there is no communication whatever. We now come to the practical question, Do the results justify all these extraordinary precautions and untiring vigilance on the part of the surgeon? In answer to this question I will read you a report of the operations performed in this hospital from January 1, 1887, to December 31 of the same year:

Thirty-five abdominal sections for the removal of ovarian tumors and diseased uterine appendages; of these 35 patients but one died, and this operation was not performed by the regular staff of the hospital.

Twenty of these cases required the use of a drainage-tube.

The abdominal cavity has been opened five times in the removal of cancerous uteri through the vagina; all of these patients have recovered.

There has been one case of suprapubic amputation of the uterus, with its annexa, for myoma, which ended in recovery.

There have been three exploratory incisions; in one of them, a case of peritonitis, the patient succumbed from shock.

There have been four operations for the radical cure of hernia, all of which ended in recovery.

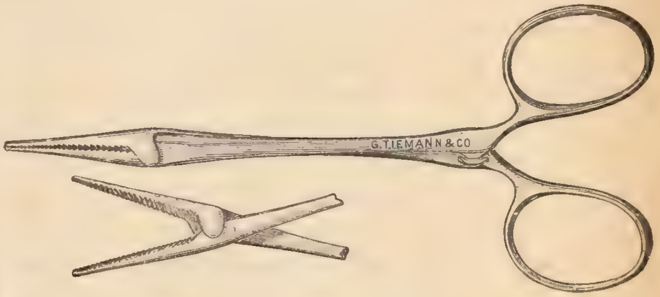
Fifty-two operations for lacerations of the cervix uteri and perinæum; all the patients recovered.

Besides these cases there have been performed in the children's department 14 cuneiform and 22 subcutaneous sections of the bones of the limbs for the cure of deformities, none of which have been attended by serious symptoms.

There have been a variety of other operations which I will not take your time to enumerate. The two deaths above recorded constitute the total mortality.

With one exception, these operations have been performed either by Dr. Mary D. Jones or myself.

I take this opportunity of presenting Collins's new hæmostatic clamp forceps, which is the simplest and most easily cleaned of any forceps with which I am acquainted, and I have adopted it almost exclusively in my practice.



Messrs. Tiemann & Co. have adapted this lock to forceps and scissors of different sizes. The lock is simplicity itself; attached to one blade there is a round pivot, which fits into an opening in the other blade. In order to hold the two blades in close apposition, as the forceps is closed, the male blade passes beneath a projecting arm attached to the female blade, somewhat similar to a Simpson obstetrical forceps. Its advantages are: (1) there are no crevices to hold dirt, so that it can be readily cleaned; (2) the lock can not be twisted off by clumsy nurses; (3) the blades are held firmly together, so that there is no wabbling.

Treatment of Ingrowing Toe-nail.—Patin recommends ("Gaz. des hôp.") for this affection that the nail be thoroughly bathed with water, then dried, and painted with traumaticin (10 parts of gutta percha to 80 parts of chloroform). Sometimes it is best to dress the toe with diachylon ointment after painting it. Of course, as complete rest as possible is to be given to the toe.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 11, 1888.

JEJUNOSTOMY.

To the three operations which have been resorted to, more or less *à titre d'expérience*, during the past ten or fifteen years for the cure or relief of cancerous or cicatricial stenosis of the pylorus—excision, dilatation, and gastro-enterostomy—a fourth has now been formally added by Maydl, of Vienna; jejunostomy, in which a permanent fistula is established near the upper end of the jejunum, through which the individual is to receive all his food. Of its three predecessors, excision of the pylorus has been damaged almost beyond repair by its results, for few of us demand so much as a certain prominent surgeon who, when asked for his opinion of the operation, said that he had not yet formed one, but was waiting for more experience—he had performed it only fourteen times, and all his patients had died. Forcible dilatation of the pylorus is applicable only to cicatricial stenosis, holds out a prospect of little more than temporary relief, and has also a high death-rate. Gastro-enterostomy, in which a permanent communication is established between the small intestine and the stomach through its anterior wall, is an operation requiring not only exceptional skill and experience for its proper execution, but also so much time, from two to three hours, that the enfeebled patient is thereby exposed to serious danger. For jejunostomy it is alleged that it is of easy, rapid execution and accompanied by but slight risk of peritonitis; that in cancer of the stomach it affords a prolongation of the period of survival and a reduction of the discomfort or suffering approximately equal to those obtained by successful pylorectomy; that in cicatricial stenosis it is less dangerous and has a more durable result than forcible dilatation; and that it is less dangerous than gastro-enterostomy, but inferior to it in that it substitutes alimentation through a fistula for feeding by the mouth.

The idea is not an entirely new one. Surmay proposed it in 1878 as suitable in pyloric obstruction and in organic and even functional disorders of the stomach. In 1880 Langenbeck, and in 1884 Southam and Robertson, established an opening in the upper part of the duodenum in cases in which the weakness of the patients forbade excision or gastro-enterostomy; all three of the patients died after surviving from eight hours to seven days. In 1885 Pearce Gould and, two months later, Golding Bird performed jejunostomy in cases of cancer of the pylorus, rejecting excision and gastro-enterostomy because of the weakness of the patient in the first case and because of extensive adhesions in the second. Gould's patient died in sixty-six hours, of exhaustion; Bird's died on the ninth day, in consequence of the accidental injection of food into the peritoneal cavity through an opening by the side of the fistula. Maydl has done the operation twice, in April and June, 1887. His first patient survived seven weeks, during the first five of which his nutrition was satisfactory, but he lost flesh rapidly during the last two; the second patient died nine days after the operation, with all the signs of insufficient nourishment, and it was discovered at the autopsy that the opening had been made at a much lower point in the intestine than had been intended, about midway between the duodenum and the cæcum. Both patients had extensive cancer of the stomach, which was adherent in the first to the anterior abdominal wall, and in the second to the transverse colon, so that neither excision nor gastro-enterostomy was possible.

It can hardly be contended that this record proves more than that the operation can be done without much risk of causing death by shock or peritonitis. Only one patient survived long enough to furnish any means of judging whether or not food introduced solely through such a fistula can maintain life for any length of time; he improved until the fifth week, then began to lose flesh rapidly, and soon died, and it remains uncertain whether his failure was due to the progress of the disease or to the way in which he was fed. Practically, then, the question as to the possibility of giving sufficient food in this manner remains as it was before any of the operations had been done. Experiments upon animals have shown that they can be nourished thus, and the well-known case of traumatic intestinal fistula reported a few years ago by Busch shows that an otherwise healthy human adult can also. This patient was a woman who had been gored by a bull. Six weeks after the accident she was brought to the hospital in a state of extreme emaciation, with an intestinal fistula situated midway between the umbilicus and the pubes, out of which the contents of the bowels escaped freely. The appearance of the mucous membrane, as seen through the opening, indicated that the wound was in the upper part of the small intestine, and this opinion was strengthened by other features of the case. Busch introduced food into the lower segment of the intestine through the opening, and the patient soon regained her former strength and weight.

Of the difficulties which suggest themselves on physiological grounds, those which relate to the gastric and pancreatic ferments can readily be met by the introduction of these ferments with the food or by preliminary artificial digestion, but those which relate to the bile are not so easily disposed of, if, as is commonly held, the bile is something more than an excretion, and assists digestion and absorption. The fact that it is poured into the intestine in large quantity, most of which is reabsorbed, is taken to indicate that it contains alimentary or other products needing to be acted upon in the intestine in order to be fitted for use before reabsorption, and consequently its flow from the liver and its temporary retention in the bowel in contact with the food should be provided for. It is also known that the passage of food from the stomach into the duodenum provokes a free discharge of bile from the liver, and the question arises whether this flow may not be injuriously diminished by a withdrawal of the duodenum from participation in the digestive process. This question, and that of the timely admixture of the bile with the food, appear to us to be the only serious ones, for the retention of the bile within the intestine, if it is once poured into it in sufficient quantity, can easily be effected by a suitable obturator in the fistula.

The technique of the operation is simple. A transverse incision three or four inches long is made to the left of the umbilicus, and carried through the outer part of the rectus and the adjoining muscles, and to a somewhat smaller extent through the peritonæum. The omentum and the colon are pressed upward and to the right; the upper end of the jejunum is sought for by passing the finger along the lower surface of the mesocolon to the back of the cavity, and when it is thought to have been found its identity should be confirmed by sight as well as by touch. Maydl's experience in his second case shows that it is unsafe to depend upon resistance to traction as evidence that the upper end has been seized. A point about a foot below the duodenum is selected and secured in the opening with twelve or fifteen interrupted silk sutures passed through its muscular coat and the parietal peritonæum and fascia in such a way as to encircle an area on the surface of the intestine about half an inch in diameter. The rest of the opening is closed in the usual manner, no drainage-tube being placed in the abdominal cavity. A silk loop should be stitched at each end of the exposed area, to facilitate its subsequent perforation, which should be made after the lapse of a few days—a week, if the patient's condition will permit of the delay—with a small Paquelin point, and should not be larger than a medium-sized catheter.

It is too early to determine the future of the operation, but its position with reference to pylorectomy and gastro-enterostomy, in case nourishment by such a fistula proves sufficient, may be measurably foreshadowed. The former will be abandoned or reserved for cases of small, non-adherent tumors; gastro-enterostomy, if such results as those recently published by Rockwitz, of Strassburg, should prove to be obtainable by others, may be preferred in simple stenosis and in cancer when the disease does not involve too much of the stomach and the patient is not too feeble. Jejunostomy will be applicable at least in cases not admitting of other operative treatment for the diminution of suffering, and perhaps even for the indefinite prolongation of life. It will also be an operation which the comparatively inexperienced but strictly antiseptic surgeon can confidently undertake, and it may also serve in some cases as a sort of operative lightning-rod which will afford a means for the relatively harmless discharge of the *furor secandi.*

THE CARE OF THE INSANE IN THE STATE OF NEW YORK.

A BILL looking to more suitable provision for the indigent insane of the greater part of the State of New York is shortly to be presented before the Legislature. It is entitled "An Act in Relation to the Care and Custody of the Pauper Insane and Indigent Insane in the Counties of this State, except New York, Kings, and Monroe Counties." We have been shown a copy of the bill, which was drafted by Professor Theodore W. Dwight, a member of the State Charities Aid Association's Committee on the Insane, and our examination of it has convinced us that it ought to be passed at once, and its provisions honestly carried out. It provides for the gradual transfer of the insane, whether their malady is acute or chronic, from the county poorhouses and the city almshouses to the State hospitals. For this purpose the State is to be divided into as many asylum districts as there are State hospitals for the insane. Each State hospital is to receive the pauper insane of its district at a uniform weekly rate of $1.50 for each patient, chargeable to the counties. For this sum the patient is to be clothed, fed, and otherwise cared for in the hospital, and to receive free transportation from his home under the guidance of a trained attendant sent from the hospital for the purpose. The bill further provides for the erection of a number of inexpensive new buildings on the grounds of the various State hospitals, to furnish suitable accommodations for the chronic pauper insane now confined in the poorhouses and almshouses of the State.

It is represented that the bill accords with the views of the State Commissioner in Lunacy, as expressed in his annual reports to the Legislature, as well as with those that have been put on record in the annual reports of the State Board of Charities, and that it meets with the approval of persons skilled in the care and management of the insane. It is within our knowledge that it has the earnest support of many discreet and conservative members of the medical profession, and there is reason to expect that it will receive the formal approval of our representative medical societies. Not the least among its titles to adoption is the fact that it is indorsed by the State Charities Aid Association, which has issued an appeal to its forty-three county visiting committees and its other members, in which it presents cogent arguments showing not only the humane purposes of the bill, but also the economical character of its provisions from the financial point of view. The State Charities Aid Association has already accomplished much in the way of simplifying and improving the machinery of public assistance in the State, it is well known to be utterly free from any elements capable of soiling the purity of its purposes, and its constitution is such as commands the respect of every good citizen who has taken pains to inform himself upon the matter. Its indorsement of the bill, therefore, ought of itself to be enough to secure its passage. It is understood that the reason for excepting the counties of New York, Kings, and Monroe from the provisions of the bill is that further legislation is needed to suit the special conditions of those counties.

MINOR PARAGRAPHS.

THE ATTEMPTS TO BURN THE HOSPITAL FOR THE RUPTURED AND CRIPPLED.

THE first of a series of attempts to destroy the Hospital for the Ruptured and Crippled resulted, as our readers are aware, in the death of one of the employees of the house. Several subsequent attempts, following each other in rapid succession, led to an investigation by the Fire Marshal, in the course of which suspicion fell upon one of the patients, a little girl. The girl confessed that she was the offender, and was handed over for the time being to the Society for the Prevention of Cruelty to Children. It is now announced that, at the coroner's inquest held over the remains of the deceased employee, an official of the society stated his belief that, notwithstanding the child's confession, she was not really the person who committed the offence; also that the coroner instructed the jury that there was no evidence against the child, whereupon a verdict was rendered to the effect that the deceased had come to her death by suffocation in consequence of the act of some unknown incendiary. This verdict may be a just one, and certainly there is no disposition on the part of the community to look upon the self-accused child as a criminal if it can be avoided, but it seems to us that this summary declaration of her innocence is hardly so satisfactory as a conclusion to the same effect would have been if it had been reached by a more formal and thorough inquiry.

AN ABDOMINAL SALPINGOTOMY IN THE LAST CENTURY.

A RUSSIAN lady, Mrs. Tkatchef, contributes to a recent issue of the "Gazette hebdomadaire des sciences médicales de Montpellier" an interesting account of a case in which, in the year 1784, Dr. Charles Augustus Seydel, of Sarepta, in the province of Astrakan, Russia, diagnosticated an ovarian tumor as large as the head of a child two years old, attached to the uterus by a pedicle. As his patient continued to suffer severely, in spite of ordinary methods of treatment, he decided to attempt the removal of the tumor by laparotomy. On the 21st of February he opened the abdomen by an oblique incision extending from the umbilicus to the right inguinal ring. The adhesions were found to be such as to render the removal of the tumor impracticable, and it was discovered that the mass was not an ovarian tumor, but an enlargement of the Fallopian tube. It was tapped and drained, giving issue to a thick, chocolate-colored liquid. During the operation the protruded intestines were protected with a towel soaked in warm milk. The abdominal wound was closed at first only with a plaster, but afterward with sutures. For the first few days the discharge from the sac, a thick and fœtid liquid, was removed at stated times with a silver tube, but, as this grew more and more unsatisfactory, the doctor sucked it out with his mouth four times a day. The patient had fever for about a week, after which she improved steadily and the opening finally closed. She was heard from two years after the operation, and was then in perfect health. A decoction of cinchona bark and various balsamic preparations were employed in the treatment of the wound, and care was taken to prevent adhesion of the intestinal coils to the peritonæum by interposing pieces of linen soaked in oil of roses.

THE LAST OF ANOTHER ANÆSTHETIC ALKALOID.

THERE appears great reason to conclude that "drumine," an alleged anæsthetic alkaloid derived from the *Euphorbia Drumondii*, is not only not an anæsthetic, but also not an alkaloid. It seems to be a compound made up in great part of calcium oxalate. Such at least is the conclusion pointed to by the investigations of several contributors to a recent issue of the "Pharmaceutical Journal and Transactions." Moreover, it is announced that the purveyors of "drumine," having found it unsatisfactory, no longer furnish it. It will be remembered that "drumine" was brought into notice by Dr. John Reid, of Melbourne. Its career is not unlike that of "gleditschine." Some of our European contemporaries have seen fit to speak of the "gleditschine" affair as "an American swindle." The "Bulletin général de thérapeutique," commenting on the matter of "drumine," more politely refers to it as "*une mystification*," without any adjective denoting its Australian origin.

A NEW OBSTETRICAL ANÆSTHETIC.

IT is not of a new drug that we are about to speak, but of so common a feminine characteristic as the passion for dancing. One of the "Union médicale's" *feuilletonistes*, the vivacious if not always strictly accurate "Simplissime," tells the story of a woman who was the subject of this passion in an extreme degree. She went to a ball when she was seven months pregnant. Feeling the pains of labor come on, she simply cursed her luck and kept on dancing. The more violent the pains grew, the more furious energy she displayed in her capers, for she was resolved to postpone her departure as long as possible. Finally, while she was taking part in a *galop*, the waters broke. But no sympathy did the poor woman get. Nobody divined the real cause of the flow of water, but the bystanders seem to have become enraged at her, thinking her uncanny. They set upon her and pursued her in her flight through the streets, but her pluck and agility enabled her to elude them at last, although none too soon, for within five minutes of the time when she first thought it safe to sit down on the ground her child was born. "Simplissime" remarks that nowadays various diabolical procedures are resorted to, under the guise of hypnotism, to persuade women that their labor is painless, but he doubts if they have ever been quite so effective as the demon of the dance was in this poor woman's case.

LA CHARITÉ AND THE SISTERS OF ST. AUGUSTINE.

LA CHARITÉ has been secularized, apparently in spite of the efforts of the medical staff to induce the *assistance publique* to retain the Sisters. It seems that the bureau has not even had the grace to thank the Sisters for their past services, whereupon M. Potain, M. Desnos, M. Féréol, M. Luys, M. Laboulbène, and M. Blachèz, physicians, and M. Trélat and M. Desprès, surgeons, of the hospital, have addressed a letter to the *Supérieure*, in which they bear touching testimony to the loyal and efficient service of the Augustinian Sisters. The full text of the letter is published in the "Union médicale."

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 7, 1888:

DISEASES.	Week ending Jan. 31.		Week ending Feb. 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	10	2	9	1
Scarlet fever	131	20	163	26
Cerebro-spinal meningitis	2	2	1	1
Measles	36	7	48	7
Diphtheria	136	52	192	38
Small-pox	1	0	11	1

The Medical Society of the State of New York.—The following is the report of the Committee on Nominations for officers for the ensuing year: For President, Dr. S. B. Ward, of Albany; for vice-president, Dr. A. Walter Suiter, of Herkimer; for treasurer, Dr. C. H. Porter, of Albany; for secretary, Dr. William Manlius Smith, of Syracuse. For censors, *Southern District*, Dr. John S. Warren, of New York County; Dr. Walter B. Chase, of Kings County; Dr. W. H. Helm, of Westchester County; *Eastern District*, Dr. Joseph Lewi, of Albany County; Dr. Thompson Burton, of Montgomery County; Dr. Leroy McLean, of Rensselaer County; *Middle District*, Dr. Henry Flood, of Broome County; Dr. Robert Frazer, of Oneida County; Dr. I. N. Goff, of Madison County. *Medical Department of Syracuse University*, Dr. I. N. Goff, of Madison County. Committee of Arrangements, Dr. E. L. Partridge, of New York; Dr. F. C. Curtis, of Albany; Dr. C. S. Merrill, of Albany. Committee on By-Laws, Dr. George Seymour, of Utica; Dr. F. A. Castle, of New York; Dr. W. M. Smith, of Syracuse. Committee on Hygiene, Dr. E. V. Stoddard, Dr. E. F. Brush, Dr. J. P. Creveling, Dr. Alfred C. Mercer, Dr. W. H. Bailey, Dr. A. N. Bell. Committee on Legislation, Dr. Alexander Hadden, Dr. Henry T. Peirce, Dr. F. C. Curtis. Committee on Ethics, Dr. A. Jacobi, Dr. Arthur Mathewson, Dr. H. R. Hopkins. Committee on Prize Essays, Dr. G. F. Shrady, Dr. F. P. Foster, Dr. Eugene Beach. Committee on Publication, Dr. W. M. Smith, Dr. C. H. Porter, Dr. Daniel Lewis, Dr. O. B. Douglass. Honorary Members, Dr. Duane D. Simmons, of Tokio, Japan; Dr. Francis J. Shepherd, of Montreal; Dr. B. F. Baer, of Philadelphia; Dr. George E. Fenwick, of Montreal; Dr. D. M. Wilcox, of Lee, Mass. Eligible to Honorary Membership, Sir Morell Mackenzie, London, Eng.; Professor William Pepper, Philadelphia; Dr. Max Schede, Hamburg; Dr. Reginald Harrison, Liverpool; Mr. Howard Marsh, London; Dr. Francis Bacon, New Haven. Delegates to the Massachusetts Medical Society, Dr. A. Jacobi, Dr. J. O. Roe, Dr. B. A. Sherman; to the Vermont Medical Society, Dr. D. M. Totman, Dr. M. L. Bates, Dr. W. O. Moore; to the Pennsylvania Medical Society, Dr. A. Jacobi; to the New Jersey Medical Society, Dr. Prince A. Morrow; to the Canadian Medical Association, Dr. James McFee and Dr. George H. Rider; to the Connecticut Medical Society, Dr. George H. Fox, Dr. Clarence C. Rice, Dr. A. M. Phelps, Dr. M. L. Bates; to the Virginia Medical Society, Dr. F. R. Sturgis; to the British Medical Association, Dr. John O. Roe. The Committee on Quarantine reported progress. The Special Committee on the Management of the Insane reported as opposed to the return of the Management of the Insane to the Counties. The reports were adopted.

The Clinical Society of the New York Post-graduate Medical School and Hospital.—Dr. James K. Crook has been elected secretary of the society.

The French Fund for Promoting the Cure of Consumption.—According to the "Gazette hebdomadaire de médicine et de chirurgie," the total amount thus far subscribed to the fund for encouraging the study of the cure of tuberculosis is 58,394fr. 10.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 29 to February 4, 1888:*

RAYMOND, H. I., First Lieutenant and Assistant Surgeon. Ordered to Fort Bidwell, California.

FISHER, W. W., First Lieutenant and Assistant Surgeon. Ordered to Presidio of San Francisco, Cal.

S. O. 25, A. G. O., January 31, 1888.

Promotions.

PAGE, CHARLES, Lieutenant-Colonel and Surgeon. To be Assistant Surgeon-General, with rank of Colonel. November 17, 1887.

McKEE, JAMES C., Major and Surgeon. To be Surgeon, with rank of Lieutenant-Colonel. November 17, 1887.

GIRARD, ALFRED C., Captain and Assistant Surgeon. To be Surgeon, with rank of Major. November 17, 1887.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service, for the two weeks ending February 4, 1888:*

WHEELER, W. A., Passed Assistant Surgeon. Granted leave of absence for thirty days. January 24, 1888.

WHITE, J. H., Passed Assistant Surgeon. Granted leave of absence for two days. January 26, 1888.

WATKINS, R. B., Assistant Surgeon. Granted leave of absence for thirty days. January 28, 1888. Resignation accepted, to take effect March 15, 1888. January 28, 1888.

VAUGHAN, G. T., Assistant Surgeon. Appointed an Assistant Surgeon, January 25, 1888, vice A. D. Bevan, resigned. Assigned to temporary duty at Marine Hospital, Boston, Mass. January 26, 1888.

CARMICHAEL, D. A., Passed Assistant Surgeon. Detailed as attending surgeon and acting chief clerk, Supervising Surgeon-General's Office. February 2, 1888.

URQUHART, F. M., Passed Assistant Surgeon. Granted leave of absence for twenty days on account of sickness. February 3, 1888.

WILLIAMS, L. L., Assistant Surgeon. Ordered to examination for promotion. February 2, 1888.

Society Meetings for the Coming Week:

MONDAY, *February 13th:* New York Ophthalmological Society (private); New York Medico-historical Society (private—anniversary); New York Academy of Medicine (Section in Surgery); Lennox Medical and Surgical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

TUESDAY, *February 14th:* New York Medical Union (private); Medical Societies of the Counties of Delaware (semi-annual) and Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations.

WEDNESDAY, *February 15th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society (clinico-pathological).

THURSDAY, *February 16th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *February 17th:* Chicago Gynæcological Society.

SATURDAY, *February 18th:* Clinical Society of the New York Post-graduate Medical School and Hospital; St. Louis Medical Society.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-second Annual Meeting, held in Albany, Tuesday, Wednesday, and Thursday, February 7, 8, and 9, 1888.

The President, Dr. ALFRED L. LOOMIS, of New York, in the Chair.

Tuesday's Proceedings.

The PRESIDENT called the meeting to order at 9.25 A. M. Prayer was offered by the Rev. Mr. RAYMOND.

The President's Address.—In his address the president recommended that every member should review in his own mind his experience, and, if he had learned something new or not generally known to the profession, that he should present it briefly either here or at some local society. He recommended that the societies of other counties take steps, as had that of the county of New York, to enforce the law regulating the practice of medicine. The medical examiner's bill, formerly before the society, had the approval of the profession throughout the State, and the speaker felt confident that if the society went unitedly and earnestly to the present Legislature with the bill as it now stood it could be made a law. He recommended that the committee on legislation be instructed to urge its passage. Questions put to medical experts in courts should not be prepared by lawyers unfamiliar with medical science, but by a medical scientist, and he recommended that the subject be referred to the committee on legislation to report whether legislation in that direction was desirable. Some tendency was being manifested to create county asylums for the insane, which the speaker thought experience universally condemned, and he recommended that a special committee be appointed to report on this subject on the last day of the present session. He also recommended the appointment of a special committee to report on the question of placing quarantine in the hands of the general government. He disapproved the recent action of the society tending toward the rapid increase of its membership, for any increase of quantity at expense of quality would be injurious. It would tend to weaken the society as a scientific organization. He recommended that a special committee be appointed to report at the next annual meeting regarding the concerted labor of physicians and pharmacists in the revision of the pharmacopœia in 1890. The names of those taken from the society by death during the year were enumerated, with special mention of Dr. Clark and Dr. Carpenter.

The Committee on the President's Address was named as follows: Dr. Wey, of Elmira, Dr. Ford, of Utica, and Dr. Lewis, of New York.

Committee on Credentials.—Dr. James Spencer, Dr. O. B. Douglass, and Dr. W. B. Brown were appointed.

Business Committee.—Dr. F. A. Castle, Dr. J. W. Whitebeck, and Dr. A. W. Suiter were appointed.

Report of the Committee on By-laws.—Dr. Weir, of the committee, reported that the constitution and by-laws of the Medical Society of the County of Westchester had been examined and approved.

The Committee on Legislation.—The report was read by Dr. Johnson. It referred to the medical law enacted last winter on the rights and duties of county medical societies to disband on a majority vote. The committee on by-laws had turned this subject over to the committee on legislation. That committee had taken no action, and, on motion of Dr. Piffard, further inquiry into the subject was dropped.

The business committee recommended divisions of the society for the morning session of the first day into medical and surgical sections. The recommendation was adopted.

The Use of Alcohol in Certain Forms of Fever.—Dr. H. Kretzschmar, of Brooklyn, read a paper on this subject in which he said that in certain forms of disease alcohol was a remedy which, if properly administered, was not only instrumental in prolonging life, but frequently was a most important factor in preserving it. Alcohol was generally spoken of as standing midway between food and medicine. In that sense it was an evil. In reality it possessed the qualities of both in marked degree. Neither the amount to be given nor the time of administration should be left to the judgment of patient or friend. Alcohol was the prince of antiseptics, and was the most reliable medicine we had in diphtheria. It dissolved the exudation in the throat, allayed the temperature, and calmed the pulse, showing its destructive effects upon the germs of the disease. Among other diseases in which alcohol was beneficial was phthisis, especially when there was elevation of the temperature.

Dr. F. A. Castle said that he put the stimulant in several small bottles, since, when exposed to the air, it lost certain valuable medicinal properties.

Neuro-therapeutic Memoranda.—Dr. J. Leonard Corning read a paper in which he described the application of medicinal agents in the immediate neighborhood of the cord in certain tetanic or painful conditions. He first measured the distance to the point at which he wished to deposit the fluid by inserting a needle, and afterward introduced the needle of the syringe. He had injected a solution of strychnine in experiments on animals and the treatment of disease of the cord in man usually at the tenth or eleventh dorsal vertebra. The benefits in certain cases, especially of functional troubles, were unquestionable. He also spoke of the benefit he had derived from the prolonged use of the interrupted current in rheumatic paralysis of the face.

Reflex Nervous Disturbances.—Dr. W. E. Ford, of Utica, in this paper related cases in which certain nervous phenomena were presented, which were treated by the removal of the causes of peripheral reflexes, and at the same time by such methods as tended to calm and restore the general nervous system. Some cases were those of chorea, epilepsy, and masturbation. Some of the causes of peripheral reflexes were a diseased state of the ovaries and tubes, phimosis, and urethral caruncle. The removal of these alone, unaided by bromides and other agents directed to the general system, would not cure the case nor give so marked relief. He desired to impress the fact that the term reflex as at present used had much too wide a range. We should no more speak of functional disease than of functional health.

Dr. E. D. Fisher thought that we should not consider a disease which had become chronic as due to peripheral irritation; being chronic, it was due to a lesion of the central nervous system. In that case removal of the cause of the original peripheral irritation would not cure the symptoms which had become founded upon a central lesion.

Dr. Corning thought that many ovaries had been cut out and many other serious operations had been performed in the interest of the so-called reflex theory, when the real cause of the trouble lay in a lesion of the central nervous system.

Influence of Obesity in Young Women upon the Menstrual and Reproductive Function.—Dr. Andrew F. Currier, of New York, drew the conclusions, from the testimony presented, that obesity occurring in young women caused disordered menstruation, and usually sterility, whether the patient had previously borne children or not. If utero-gestation were completed in such patients the child was likely to manifest deficient vitality. The quantity of the flow was almost always less than normal, of abnormal quality, the duration a few hours or a day. Pain was almost a constant symptom. It was in the sacral region in nearly all cases. Vicarious menstruation was common. Constipation was usually present. There was often a hereditary predisposition to early obesity. It might be brought on by luxurious habits, sluggish disposition, passive sexual indulgence, free use of starchy and saccharine foods. Suggestions as to treatment were based on the ætiology.

Bovine Tuberculosis.—Dr. E. F. Brush, of Mount Union, read a paper on this subject. He commenced by remarking that, after all discussions respecting tubercle, we were confronted with the question, "Is bacillary tuberculosis conveyed to the human race from animals affected with this disease?" Of all domesticated animals, the bovines were the most subject to tuberculosis; indeed, the human and the bovine races were pre-eminently tubercular. To no other animal did we owe so much for food and clothes as to the cow, and it would be strange if we did not acquire from her some malady. It was certain she did not acquire tuberculosis from man. The percentage of cattle infected with tuberculosis in England was placed at 5 per cent., and increased till, in some of the thoroughbred Jersey herds of the Northern States, Professor R. A. McLean declared that 20 per cent. were so affected. The reason why more human beings were not infected was that the normal temperature in the human race was so much lower than in the bovine that the germ would not grow till the temperature was raised in the former to the degree naturally existing in the latter—namely, 101° to 103° F. The same rule held also in localized tubercular deposits where the temperature was raised by reason of injury to a degree permitting the growth of the bacillus. The cultivation of tuberculosis in other animals confirmed this view, as the resistance to tuberculosis decreased in proportion as the natural temperature of the animal increased. Thus in the dog, with the lowest temperature, resistance was good, while in the common fowl, with the highest temperature, resistance was *nil.*

The speaker continued that the Federal Government had contributed half a million of dollars to stamp out pleuro-pneumonia, which did not affect the human race, while scrofulosis, which decimated the human race, was left uncontrolled. He expressed the opinion that tuberculosis in man was derived from the bovine race, and pointed to the curious fact that where these animals were not domesticated, pulmonary phthisis was unknown. He said that if bovine tuberculosis were stamped out by means of laws regulating the breeding of bovine races, it would soon become eliminated from the human race, and he was of the opinion that medical men should be instrumental in procuring the enactment of such laws.

Action of Caustic Applications on the Nasal Mucus.—In a paper on this subject, Dr. F. H. Bosworth, of New York, said that chemical agents differed in no essential particular from the potential cautery in their action upon the mucous membrane. He preferred chromic acid to other chemical agents in the treatment of cases under discussion. With this caustic he pinned down the mucous membrane at points exactly as might be desired. A single application often cured cold in the head by reducing the hyperæmia of the Schneiderian membrane.

Surgical Section.

Dr. A. M. Phelps, of New York, in the Chair.

Note on the Treatment of Lupus.—Dr. H. G. Piffard, of New York, in a paper on this subject, related six cases of lupus treated by hydro-naphthol in a 10-per-cent. solution of liquor gutta perchæ or in a 20-per-cent. solution of rubber plaster. The solution was applied daily for a week, when a crust formed. If the plaster was used it was allowed to remain a week.

Dr. P. A. Morrow, of New York, also read a paper on the treatment of lupus, advocating the method of scarification which acted by dividing the small vessels.

Extraction of Cataract without Iridectomy, with a Report of 100 Successive Cases.—Dr. Hermann Knapp, of New York, read a paper with this title. He said that the revival of the old method of extraction would have proved a failure today, as it had in previous attempts, but for the introduction of cocaine, eserine, and the antiseptic method. These counteracted its two chief drawbacks—viz., prolapse of the iris and suppuration. In the 100 cases under consideration, prolapse of the iris occurred in 11, in all of which, however, the patients obtained good sight, except in one case, in which the prolapse was secondary to suppuration—the only case of suppuration and failure that had occurred in the whole series. It referred to a man who suffered from purulent dacryocystitis and diabetes, with 6 per cent. of sugar in his urine. Four patients regained only moderately good sight, but they were cases of complicated cataracts, and 95 patients regained good sight, of whom 19 had perfect vision (20 per cent).

This unusual high rate of restoration of good sight the speaker believed to be due to the frequency and harmlessness of secondary division of the capsule, which he had done in 47 cases of this series.

Fatal Meningitis consecutive to Operation for Extractions of Cataract.—Dr. David Webster, of New York, read a paper with this title, in which he stated that on the fourth day after the operation chemosis set in, on the eighth day panophthalmitis was well marked, symptoms of meningitis appeared on the twelfth day, and the patient died a week later. The case, he believed, was unique.

New Urethral and Bladder Instruments were demonstrated by Dr. F. N. Otis, of New York.

Galvano-puncture for Enlarged Tonsils.—Dr. F. H. Potter, of Buffalo, read a paper in which he described such treat- by plunging a sharp-pointed electrode twice into the enlarged tonsil at frequent sittings. The danger of hæmorrhage was thus avoided.

Results of Mechanical Treatment of Hernia founded upon the Observation of 1,000 Cases.—Dr. W. B. De Garmo, of New York, read a paper in which he stated that he had effected a permanent cure in about one fourth of all cases of hernia, taken indiscriminately, which he had treated by mechanical methods alone.

Nominating Committee.—The President appointed as member at large, Dr. H. G. Piffard; first senatorial district, Dr. A. M. Phelps; second, Dr. L. H. Miller; third, Dr. A. Vander Veer; fourth, Dr. W. C. Hamlin; fifth, Dr. George Seymour; sixth, Dr. W. C. Wey; seventh, Dr. John L. Heffron; eighth, Dr. J. O. Roe.

Removal of Laryngeal Growths with O'Dwyer's Snare, in Conjunction with Intubation of the Larynx.—Dr. Clarence C. Rice, of New York, read a paper on this subject, in which he referred more particularly to cases occurring in children, in whom a satisfactory diagnosis was very difficult. He first applied cocaine to the pharynx, and then gave chloroform when proper. O'Dwyer's snare was more convenient and less dangerous in the hands of the general practitioner than were the ordinary wire snare or forceps.

Discussion on Acute Bright's Disease.

Pathology and Clinical History were discussed by Dr. Francis Delafield, of New York, who said that he had studied nephritis with greater satisfaction than ever before during the past three years. He divided acute Bright's disease into three classes: Exudative nephritis, parenchymatous or cellular degeneration, and diffuse nephritis. The first was characterized by congestion and exudation of plasma, emigration of white blood-cells from the vessels, etc. The exudative form was divided into four varieties: First, a mild form, which gave rise to symptoms during life, but which left no lesions in the kidneys after death; second, a more severe form, in which were inflammatory products in the kidneys after death; third, a form characterized by the excessive production of pus-cells; fourth, a form in which the inflammation was prolonged over an unusual length of time, and caused more extensive changes in the kidneys. Here we would expect that the products of inflammation would collect in the tubules or in the stroma between the tubules, part being found in the urine and part in the kidneys after death; also that the quantity of the inflammatory products would be in proportion to the severity of the inflammation, and that a certain number of pus-cells would belong to the especially severe cases; further, that in mild forms no inflammatory products would be found after death. This form of nephritis accompanied many infectious diseases; it also complicated the puerperal state. In the mild cases the only symptoms were those in the urine, which was somewhat diminished in quantity, of normal or high specific gravity, containing albumin in small quantities, a few casts, and some blood. In the more severe cases the changes were more decided. The patient presented constitutional symptoms varying in number and severity, febrile movement, headache, muscular twitching, general convulsions, dyspnœa, dropsy, pulse of high tension, etc. In acute parenchymatous nephritis these symptoms were somewhat changed. It might be a primary affection, or complicate scarlet fever, diphtheria, etc. The invasion might be sudden, present marked prostration, restlessness, delirium, stupor; it might lead to loss of flesh and strength, and also to the typhoid state. Dropsy was slight or absent. The urine was not so much diminished as would be expected; the specific gravity was not changed; albumin, casts, and red and white blood-cells were present in considerable quantity.

Disturbance of the circulation was frequently associated with it. It was one form of scarlet-fever nephritis; it occurred in diphtheria, in pregnancy. The urine was scanty, colored by blood, of normal or low specific gravity, contained much albumin, numerous casts of all kinds, and blood. The invasions might be sudden and short, terminating fatally, or be prolonged over months, or the invasion might be gradual. The prognosis was bad, as the disease was permanent and progressive, and sooner or later proved fatal.

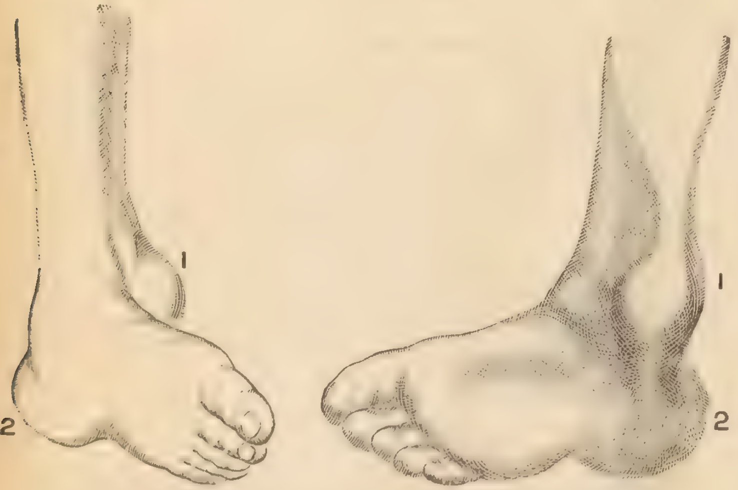
(*To be continued.*)

NEW YORK SURGICAL SOCIETY.

Meeting of January 11, 1888.

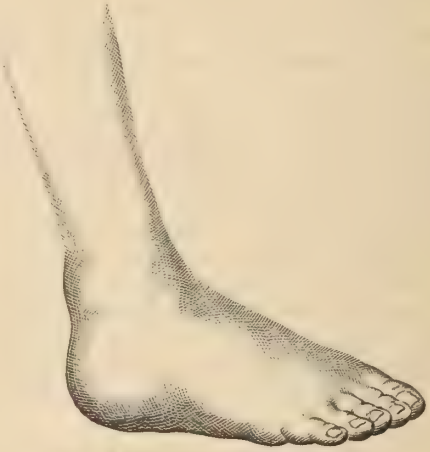
The President, Dr. LEWIS A. STIMSON, in the Chair.

Congenital Club-foot cured by Excision of a Wedge-shaped Piece from the Tarsus.—Dr. H. B. SANDS presented a patient, together with plaster casts showing the condition before and after operation. The following history was given: Martha H., aged twelve, when first seen presented an exaggerated congenital deformity of the foot, which had never been treated. The condition was equino-varus with extreme supination, so that the child walked upon the dorsum and outer side of the foot, where a large bursa had developed that at first sight appeared to be the os calcis; the latter bone, however, was drawn inward and upward in a position of extreme supination. The case was of interest as compared with that of the second patient, who had been treated by a different method.



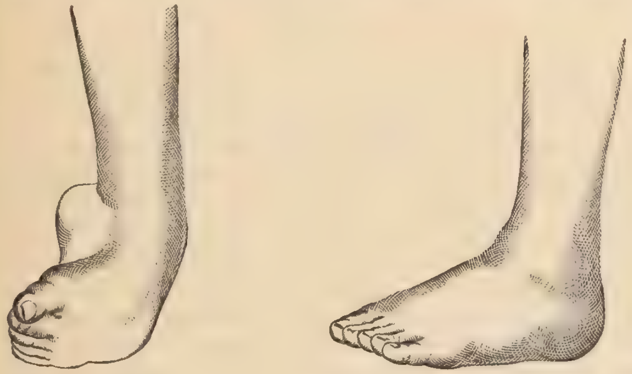
Case of Martha H., before the operation. 1, the os calcis; 2, the bursa.

The operation was performed on November 5, 1887. An incision four inches in length was made on the outer edge of the dorsum, the bursa being first dissected out. A wedge-shaped piece of bone was then removed from the outer border of the tarsus, which included portions of the os calcis and cuboid, with the articulation between them. As this proved to be not enough to overcome the deformity, the rest of the cuboid and the external cuneiform bone were next excised. The deformity still persisted, so that it was found necessary to remove portions of the middle and internal cuneiform, with a large part of the scaphoid. The abnormal rotation was then mainly overcome, but it was still necessary to divide the tendo Achillis, which allowed the foot to be held in almost perfect position, slight plantar flexion, however, remaining. A plaster-of-Paris splint was at once applied. Four days after the operation there seemed to be undue constriction from the bandage, whereupon the dressings were changed; they were not disturbed after this until December 3d, when the wound had entirely healed with the exception of a superficial ulceration. As there was an excess of integument, the healing process did not proceed as rapidly as it would have done under other circumstances. By December 17th the wound had entirely healed. On January 5th the splints were removed. At the present time the pronation of the foot was perfect, but there was still a slight talipes equinus, which was said to be a common defect after the operation. This might perhaps be overcome subsequently by the usual orthopædic treatment. The child had not been encouraged to walk very much as yet, since the bony union might yield to the weight of the body, and the power of locomotion be thus impaired. There was a considerable amount of motion at the ankle joint.



Case of Martha H., after the operation.

Congenital Club-foot cured by Excision of the Astragalus, with Portions of the Os Calcis, Cuboid, and External Malleolus.—The case of Sadie S., aged six, was presented by Dr. SANDS in order to illustrate a method of treatment different from that adopted in the former case. One objection urged against excision of a wedge-shaped piece from the tarsus was that it did not correct the deformity so well as when the entire astragalus was removed. Another objection was that the foot was thereby shortened and the arch destroyed or weakened. When the astragalus alone was removed the shortening of the leg tended to overcome the plantar flexion, so that it was sometimes found unnecessary to divide the tendo Achillis in order to correct this part of the deformity. The operation alluded to was praised also because it left the arch of the foot undisturbed. But in the present case it became necessary also to remove a wedge-shaped piece from the tarsus. An incision two inches and a half long was made on the outer part of the dorsum extending backward just below the external malleolus. The astragalus was first removed, but this had little effect on the deformity. The anterior extremity of the os calcis and a small portion of the cuboid were then excised, and, after removal of a portion of the external malleolus three eighths of an inch in length and division of the tendo Achillis, a perfect position was obtained. A plaster-of-Paris splint was applied, the dressing being first changed at the end of four weeks, when the wound was found to have healed by the first intention. The splint was reapplied and removed in three weeks, when the patient was discharged. Tenotomy had been performed for equinus of the opposite foot. When the child left the hospital the result seemed to be very good as regarded motion at the ankle, but the speaker could not say whether this would remain. He thought that there was a considerable difference of opinion regarding the comparative merits of orthopædic treatment and bloody operations in the management of club-foot, which was due to the fact that orthopædic surgeons usually dealt with cases at an early stage of the deformity. In the case of older children it was often necessary to operate because the bones themselves had undergone great changes in shape and position. There was some danger that surgeons might go to the opposite extreme in operating upon young children who would be benefited by the simple use of apparatus. But, in such cases as those presented, operative treatment alone would avail.



Before the operation. After the operation.

Case of Sadie S.

Dr. C. T. Poore said that he had examined the astragalus removed from the second patient, and found that the head and neck inclined inward at an angle of 55°, the normal inclination in a child of that age being about 10° or 15°. There was also a depression of the head and neck downward of about 55°. There was, in addition, marked deformity of that portion of the bone which articulated with the tibia; the latter was probably a secondary deformity. He had recently seen in a neighboring city a woman, thirty years of age, with marked congenital talipes equino-varus, who had been for some time under treatment by forcible twisting of the anterior portion of the foot; there had been some improvement in the position of the feet, but there was no motion between the individual bones, and the feet presented a wooden appearance, so that he doubted if a useful foot could be obtained. The speaker did not see how any operation short of removal of bone could be successful in such a case as the one under discussion. The deformity in Dr. Sands's case was due, first, to a change in the neck of the astragalus, and, secondly, to the curving in of the os calcis. It might have been possible to save the articulations of some of the small bones by excising a V-shaped piece from the os calcis, and then shortening the astragalus. The absence of motion seemed to be due to thickening of the posterior part of the capsule of the ankle joint. Dr. Parker advocated division of this ligament. The speaker had performed the operation described, of removing a V from behind Chopart's groove, five or six times with very good results. He had never seen such a marked deformity as that in the patient presented. With regard to the danger of having bandages too tight, he said that he had once lost a patient because there was too much constriction by the inner bandage.

Dr. Sands thought that in the case of the first patient flexion was good. The slight degree of equinus would have been overcome if the astragalus had been removed.

The President thought that much of the difficulty in walking in the case of the first patient was due to the fact that dorsal flexion to a right angle was impossible, so that the patient was always obliged to keep the affected limb in advance of the other. To avoid this difficulty, by making dorsal flexion possible, Bœckel, of Strassburg, practiced excision of the astragalus. If the impediment to this motion in the present case was due to bony contact between the astragalus and the anterior edge of the tibia, there was but little reason to expect any improvement in the course of time.

Dr. Sands said that the equinus, as well as the other deformity, was corrected when the astragalus was removed. Time would be required before good motion could be obtained. The advantage alleged for simple removal of the astragalus—namely, that the arch of the foot would not be impaired—could not be urged in the second case, because the deformity was not relieved until portions of the os calcis, cuboid, and external malleolus had been removed. The leg was somewhat shortened, but when the child left the hospital the malleoli were at quite a distance from the ground.

The President said that he had removed the astragalus in two cases; in one case there was good motion subsequently.

Dr. Poore said that he had once removed the astragalus for malignant disease, and the result was good.

Dr. J. A. Wyeth said that he had performed wedge-shaped excision of the tarsus twice, sawing through the head of the astragalus, and also removing a little of the scaphoid. The result was better than he had expected. In the first case there was great deformity; not only was the foot rotated on itself with the sole turned upward, but the toes pointed directly backward.

Dr. Sands remarked that it was important to remember that no two cases were exactly alike. He had once operated upon a young woman who had had paralysis since infancy, being obliged to walk with crutches. There was considerable rotation. He removed the head and neck of the astragalus, and the deformity was at once rectified. The surgeon could never tell before the operation just how much bone he would be obliged to remove.

Dr. Poore asked if the principal deformity was not due to malposition of the neck of the astragalus.

Dr. Sands said that he could not tell. It might be necessary to remove a portion of the os calcis also.

Dr. Wyeth believed that it was better to deal with the tarsus as if it were a single bone, excising sufficient to overcome all resistance to reposition.

Excision of the Knee Joint; Recovery with Good Union.—Dr. Poore presented a girl fifteen years of age who had had trouble with her knee nine years before with dislocation of the tibia backward. The joint was thereupon excised in October last, the fragments being secured with three nails. The wound healed under a single dressing. The patient was in bed forty days and had been up and about since the expiration of that period. Now there was good bony union, and the shape of the limb was excellent; there was shortening to the extent of one inch.

In reply to a question by Dr. Sands, Dr. Poore said that he had found no tuberculous foci in either the bones or the tissues around the joint. To Dr. Wyeth's question he replied that the dislocation was not traumatic.

Subperiosteal Resection of a Portion of the Superior Maxilla for Epulis.—Dr. Frank Hartley presented a boy upon whom he had operated for sarcoma involving the upper jaw. The growth had increased in size rapidly during the preceding two months. The operation was performed on December 15th; the incision was made within the mouth, the periosteum of the hard palate being preserved as far as possible. The tumor proved to be a mixed round-celled and spindle-celled sarcoma, containing a few giant cells. The patient showed only a slight deformity.

Dr. Wyeth said that he had been greatly interested in this case because he had performed the operation himself, having presented to this society a man from whom he had removed nearly all of the left upper maxilla without any external incision. It was no longer necessary to make such an extensive incision through the cheek as was formerly done.

Ununited Fracture of the Femur treated by Excision of the Ends of the Bones without Wiring; Recovery with Good Union.—The President presented a young man who, when first seen in September, 1887, had an ununited fracture of the middle third of the left femur, with nearly two inches shortening. The fibrous union was broken up by forcible bending under ether, and the limb was kept in plaster of Paris for a month, but union did not take place. An incision was then made in front over the projecting end of the upper fragment; the lower fragment was found overriding it posteriorly. The ends were cut square and the fragments were placed in apposition, but no sutures were introduced. A drainage-tube was inserted, and a thick antiseptic dressing was applied, which served also as a temporary splint; the limb was kept on an inclined plane. At the end of a week the dressing was removed and reapplied after removal of the tube. A fortnight later, the wound having then healed, a plaster-of-Paris bandage was applied; after the expiration of a month union was found to be well advanced. After another bandage had been worn for several weeks, union was perfect. There was now shortening to the extent of from an inch and a half to an inch and three quarters. The knee was still stiff, and the patient walked with a marked limp, but an improvement in this was reasonably to be expected.

Dr. L. S. Pilcher asked if any cause for the failure of union had been discovered. The president replied in the negative.

Dr. W. T. Bull asked if there was any special reason why the bone was not wired. The president said that he believed that he could obtain union without wiring and wished to make the experiment.

Dr. Bull said that he had operated in a similar case at the New York Hospital within a year. The patient, a truckman, had a fracture at the lower third of the femur. At the end of three months, after treatment with extension and splints, there was no union. For three months more efforts were made by subcutaneous drilling of the fragments to secure union, but without avail. At the end of six months the fracture was exposed by an incision eight inches long on the outer side of the limb and one four inches long on the inner side. The ends were overlapping and much thickened by new bony deposit. It was found impossible to turn out the ends and wire them, and they were placed in apposition, a plaster-of-Paris splint being applied with the antiseptic dressing. Some "slipping by" of the ends occurred, as shown by the shortening, but the wound united under one dressing, and union was firm in three months from the operation. The knee was stiff and the shortening was two inches. A similar case had been under treatment by one of his colleagues at the same time, but, though the ends were wired and the wound healed promptly, union failed.

Dr. Sands remarked that in the patient who was presented the upper fragment seemed to be quite prominent. He thought that if a number of successful cases were recorded it would prove that the method adopted by the reporter was a valuable one.

The President said that this was the third successful case in his practice.

Dr. Bull thought there was at least two inches shortening.

The President said that there was no more shortening than there had been at first. In reply to a question by Dr. Bull, he said that no attempt had been made to restore the function of the knee joint by rupturing the adhesions in the joint.

Exploratory Incision for Supposed Pyonephrosis.—Dr. Wyeth reported the following case: On beginning his term of service at Mount Sinai Hospital in September, 1887, he found in the ward a man, fifty-four years of age, who had been admitted some months before. Several calculi were removed from his bladder by the lateral incision. A fistula existed at the site of the wound for two or three months, but eventually closed. After this he developed pain in the left kidney, and had fever (the temperature ranging as high as 104° F., and once reaching 107°). Dr. Gerster had aspirated the kidney, but found no pus. Dr. Wyeth repeated the operation and obtained a few drops of pus. On exposing the kidney through the lumbar incision, no enlargement was found and no sign of abscess. The capsule was torn through at the lower end of this organ and two drainage-tubes were introduced, but at no time did any pus escape through them. The peculiar feature in the case was that from the time of the operation the patient had no more pain or rise of temperature, and made a complete recovery.

To a question by Dr. Bull, Dr. Wyeth said that the pain was distinctly localized in the left kidney. The few drops of pus found in the aspirator-needle evidently came from the pelvis of the kidney.

Everted Dorsal Dislocation of the Hip.—The President said that he was able to complete the history of the case of everted dorsal dislocation of the hip reported by him at the last meeting in December. The dressings were removed from the patient on the day of the report, three days later the dislocation recurred, and a week later the patient died, apparently in consequence of the progress of her pulmonary disease.

The autopsy showed the absence of fracture of the acetabulum or femur, and that the repeated recurrence of the dislocation had been due to the interposition between the bones of a portion of the lower and anterior part of the capsule, which lay as a flat band across the lower part of the acetabulum, and prevented the head of the femur from fully entering the socket. The outer branch of the Y-ligament was ruptured, as was believed always to be the case when eversion was present. The soft parts behind the joint were greatly lacerated, and a large abscess had formed there.

In reply to a question by Dr. Sands, he said that he knew of no other case in which such interposition of the capsule had been seen at the hip, but a number of cases of its occurrence at the shoulder had been reported.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of December 7, 1887.

The President, Dr. Hermann M. Biggs, in the Chair.

The Reduction of Old Dislocations, with Report of a Case of Reduction by Arthrotomy.—A paper with this title was read by Dr. J. J. Garmany (see page 142).

Dr. L. A. Stimson considered that Dr. Garmany's case was one of great interest and that the result was very good. He thought that the differences between old dislocations with regard to reduction were due not solely to time, but also to other considerations, such as the presence of the capsule between the articular surfaces. This condition might be rare, but that it did sometimes exist had been proved. In considering the treatment of old dislocations, he would divide it into two heads. First, reduction proper; second, alternative measures if reduction was impossible. The dangers of forcible reduction were very great, medical literature being filled with cases of failure or death, there being no fewer than forty cases of rupture of the axillary artery, a danger which no man could foresee. He did not believe that it was by traction that the artery was ruptured, but by excessive abduction of the humerus, causing elongation of the branches of the axillary artery and resulting in their being torn away at their junction with the trunk; this danger should render it inadvisable to attempt forcible reduction. In other joints than that of the shoulder the conditions, of course, differed. At the elbow joint (especially in the young) overgrowth of bone, due to stripping up of the periosteum, was frequent and rapid and caused a serious condition, or the sigmoid cavity might become filled up with fibrous tissue, either condition rendering reduction impossible.

With regard to alternative measures, he believed that, theoretically, arthrotomy was better than forcible reduction, but experience had not yet proved it to be very successful. He believed arthrotomy to be exceptionally dangerous in recent cases or in those which had recently been under violent attempts at reduction. In one case he had laid a joint open a second time and had found the articular cartilage ragged and ready to drop, the cause of which was, he thought, cutting the adhesions too close to the bone in the first operation.

He thought that the advisability of undertaking arthrotomy depended upon the joint involved, and even upon each individual case. Arthrotomy at the hip joint presented a dreary list of failures—seven or eight that he could recall, two of which had occurred within the last year; of these, only one case, Dr. McBurney's, at St. Luke's Hospital, had been successful as regarded reduction of the dislocation, and in that case caries of the head of the femur had followed.

At the elbow, if the patient was young and the dislocation four or five months old, the form of the joint would be destroyed by growth of bone due to relief of pressure. This would be most marked in the humerus and radius. In one old case it had been reported that the neck of the radius was elongated an inch. In such cases there was nothing to do but excise or leave it alone.

At the shoulder joint he had never had a case of excision or arthrotomy following dislocation. He related the history of a case of subcoracoid dislocation five months old which he had dismissed one year ago after an attempt, under ether, to better the condition, which had been only partly successful. The patient had returned a month ago with a seemingly normal and perfectly good joint. This he could only account for by absorption of the intervening capsule.

Dr. L. H. Sayre said that he would agree with Dr. Stimson with regard to non-removal of adhesions in arthrotomy. He would be guarded in advising an operation, but, if one was necessary, it would depend upon the conditions found whether arthrotomy or excision would be better.

Dr. R. T. Morris said that the literature of the subject of old dislocations was black with the histories of accidents that had happened to the patients during attempts at forcible reduction. The antiseptic surgery of to-day had opened a new field for work in managing old dislocations, and, now that we were not afraid to open joint cavities, a large proportion of old dislocations could be successfully treated by operative methods. A certain number of reductions could be effected by methods which avoided cutting, and in three cases of old dislocation of the head of the femur upon the dorsum of the ilium Dr. A. M. Phelps, of New York, and Dr. Moore, of Rochester, had thrown the head of the bone into the great sacro-sciatic notch and obtained very satisfactory results.

As a rule, however, it must be remembered that in attempting to reduce an old dislocation by ordinary methods we were trying to do an intricate surgical operation subcutaneously, or in the dark, the instrument being the dislocated bone. As the surrounding tissues were changed in character and position as soon as the reparative processes were completed, it would certainly seem to be an unsurgical procedure to attempt to work in the unknown territory, as the Irishman played the fiddle, "by main strength." He wished to put himself on the side of those who believed in accurate operative measures when dealing with the majority of old dislocations.

In the case of an old dislocation at the ankle joint he had resected the astragalus and tibia and fibula at their articulation. The fresh bony surfaces were united by silk-worm gut and primary bony union was obtained. Since the date of the operation the medio-tarsal articulation had become such a free one that the foot was not stiff and the act of walking was well performed.

Dr. L. W. Hubbard thought that every one recognized the great danger in forcible attempts at reduction of old dislocations, and that all manipulations should be made with great care. It seemed to him that the principal point for discussion in Dr. Garmany's paper was the choice of operations—arthrotomy or excision. In making the choice, the nature of the articulation must be taken into consideration.

In a ball-and-socket joint, like the shoulder, with a large and loose capsule, the surrounding structures not adherent and the joint easy of access, the operation of arthrotomy was undoubtedly to be tried before resorting to an excision. At the elbow, on the other hand, we had a hinge-joint with close bony approximation, an adherent capsule, and ligaments the removal of which endangered the life of the bone. Also, as had been shown by Dr. Stimson, there was a tendency here to rapid development of new bone, rendering an arthrotomy difficult. The results of excision at the elbow were uniformly good, and he thought excision preferable to arthrotomy at this joint. In cases of chronic dislocations of the knee joint following tuberculous disease of the articulation, he had seen excellent results from the application of apparatus making traction and pressure in the proper direction.

Dr. L. W. Hotchkiss thought that too great stress could not be laid upon the dangers attendant on attempts at reduction of dislocations of long standing by extension and forcible manipulation. He thought that, inasmuch as in each case the amount of mobility and utility in the joint depended on the kind of joint involved, and on the kind of dislocation, the method of treatment, operative or other, should be regulated accordingly, each case being a law unto itself. In view of the good results of conservative treatment as compared with those of arthrotomy, he would be disposed to reserve the latter operation for exceptional cases. At the elbow joint he was inclined to favor excision rather than arthrotomy.

Dr. Garmany insisted on the advisability of early arthrotomy after futile attempts at reduction. The case of a very old dislocation, where no attempts at reduction had been made, was cited as one of the numerous examples proving that the tissue changes depended largely on these attempts. So far as his experience went, the lacerated tissues could be freely exposed under strict antisepsis.

Nodulated Tumor in the Axilla.—Dr. Samuel Alexander presented a case in which the tumor had appeared three years after the initial lesion of syphilis, the patient not being under treatment at the time of the appearance of the growth. Under the internal use of potassium iodide the tumor had greatly decreased in size.

Dr. Morris would not distinguish this from a sarcomatous growth on the strength of the mere fact of diminution in size under such treatment, as some malignant and some benign growths had rapidly decreased in size under the use of the following ointment:

℞ Potassium iodide.................. ʒ jss.;
Water.............................. f ʒ jss.;
Lanolin........................ad ℥ j.

It caused limited activity of development.

Pott's Disease.—Dr. W. W. French reported a case which presented some features new to him, and he desired to learn the experience of the society in similar cases.

J. H., aged six years, was brought to his office, October 28, 1887, on account of a lump on the back. The mother had died of phthisis; the father had diarrhœa. The child was fairly well nourished, appetite good, no shortness of breath, no cough, no night-sweats, no fever. Three years ago she had fallen out of a swing. A year and a half later a small projection had been noticed on the back, which had grown larger during the last six months. Examination showed a decided projection of the spinous processes of the third lumbar vertebra, involving to a less degree the second and fourth. Her body was inclined to the left, and the belly was protuberant. There was no redness or tenderness over the projection, no pain on striking upon the heels. There was rigidity of the spine. No lesion of the lung could be detected, but auscultation over the projection revealed a blowing murmur more distinct on the left side. The murmur was not audible over the abdomen except as transmitted along the iliac arteries. On account of the tense and protuberant abdominal walls, palpation gave no information, and percussion did not reveal a definite tumor.

Dr. French asked, first, if it was usual in Pott's disease to observe a murmur over the prominence, and, if so, how it was explained. Second, how a pulsating sarcoma of the vertebræ in this situation could be diagnosticated.

In reply, Dr. R. H. Sayre said it was rare to find a murmur at the point of curvature in Pott's disease. In the adult he had seen cases where aortic aneurysm had produced such erosion of the vertebræ that the deformity resembled that of Pott's disease, and he had seen the mistake made of confounding the diseases. He thought the age of Dr. French's patient would exclude aneurysm, and the case was therefore of unusual interest as showing the obstruction of the lumen of the vessels to be due either to the sharpness of the curve itself or to pressure of an abscess.

Cystic Tumor of the Testicle.—Dr. Parker Syms presented a specimen which he had removed from a patient at the Colored Hospital. The patient had tertiary syphilis, and had had two attacks of gonorrhœa. The tumor was of three years' growth, and had followed an injury. From the coverings, he was inclined to regard the cyst as a spermatocele, but no spermatozoa had been found.

Dr. R. H. Sayre presented a hip joint removed from a subject in the dissecting-room of Bellevue Hospital Medical College. No history could be obtained. The left thigh was flexed, adducted, and rotated inward. There were no sinuses. The capsule was ruptured below, and there was pus in the surrounding tissues. The acetabulum was perforated. It was not known whether there had been any communication with the rectum. There was a marked exostosis on the brim of the pelvis, and also on the upper edge of the acetabulum, which appeared to have shifted its position upward. The disease seemed to be confined principally to the acetabulum, the neck of the femur being but little injured.

Pneumothorax.—The President presented a lung from a case in which the introduction of a hypodermic needle into the chest for diagnostic purposes seemed to have given rise to the condition. (For the history of the case, see page 49.) Too little attention, he remarked, had been drawn to the danger from the indiscriminate diagnostic use of the hypodermic needle.

Dr. Syms said that he remembered hearing of such a case from a friend who made the autopsy. The patient, a child, had had bronchitis or broncho-pneumonia, following some acute disease. Both pleural cavities had been explored by a hypodermic needle in search of fluid. A few hours afterward the child had died with extreme dyspnœa. The autopsy revealed the fact that there was a double pneumothorax. Both lungs were compressed against the spine. The needle had passed through the lower margin of each lung. One opening in each lung transmitted air when placed under water.

ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

Fourth Meeting, held in New York, January 18, 1888.

The President, Dr. William H. Baker, of Boston, in the Chair.

Electricity in Gynæcology.—Dr. E. L'H. McGinnis, of New York, read a paper entitled "The Use of Galvanism in Gynæcology" (see page 121), and Dr. A. H. Buckmaster, of Brooklyn, read a paper on "The Electrical Treatment of Fibromyomata."

Dr. Freeman, of Brooklyn, having been invited to open the discussion, said that he agreed to most that had been stated in the papers. Regarding Dr. Buckmaster's remarks on the spontaneous cure of uterine fibroids, he thought some further explanation was required. He had seen several cases of spontaneous cure, but on further study he had come to the conclusion that they were not really cases of fibroids, but of exudations in the pelvis. When such exudations became fixed it was difficult to say in some cases whether they were not fibroids. Apostoli's method of treatment by electricity was undoubtedly a good one, and was in advance of methods previously used. The speaker, however, had never employed it, having had such satisfactory results with his own method, which he had practiced twelve years. It was the method he had explained before the society a year ago. Some had said that they had never known a fibroid to disappear entirely under electrical treatment. The speaker had observed complete cure in several cases. The two important symptoms connected with such tumors, pain and hæmorrhage, were almost invariably controlled, although the tumor might not entirely disappear. The speaker showed the needle employed by him, and took exception to Dr. Buckmaster's statement that the method by the introduction of the needle through the abdominal wall into the tumor need be mentioned only to be condemned. The speaker had never had any untoward result except in one case, and that had been due to his own carelessness, as he passed the positive pole through the uterine substance between two fibroids. The danger was so small that it need not be taken into consideration. He thought that, if electricity were used more, opium would be used less, which would be a great gain. He mentioned a case of very large uterine fibroid in which one treatment with a powerful current relieved the patient of marked symptoms and reduced the tumor considerably in size. One or two treatments often sufficed to practically cure small fibroids with their attendant symptoms. Cases of multiple fibroids were not proper subjects for this treatment.

Dr. A. D. Rockwell, of New York, who spoke by invitation, did not believe that complete reduction of fibroid tumors was obtained by electrolysis very often. He would not say that it never occurred, but he felt sure that as a rule nothing more than moderate reduction was accomplished. He had never seen a fibroid on the exterior of the body destroyed completely by electricity, and there we had full sway in treatment. He believed in the electrical treatment of uterine fibroids, not for the purpose of driving them away, but rather for the relief of the symptoms which followed in their wake. Symptomatically, they could thus be cured.

Dr. Moseley, of Baltimore, said the president had stated, in a paper read two years before, that he did not measure the strength of the current employed, but went by the feeling of the patient. He asked those present whether they judged of the amount to be used by milliampères.

The President remarked that his opinion of two years ago was not his opinion to-day; he now always used the galvanometer.

Dr. Freeman had formerly reckoned by the number of cells employed, but during the past two years he had measured the strength of the current, and had gone as high as 400 milliampères.

Dr. J. B. Hunter, of New York, thought that in Apostoli's method so powerful a current was tolerated only on account of its being distributed over a large surface. Apostoli never gave the patient an anæsthetic; he was guided in his treatment by her sensations.

Dr. A. F. Currier, of New York, thought the electrode shown by Dr. Martin, of Berlin, at the last International Medical Congress was simpler and more convenient than one of clay. Little had been written about the influence of electrical treatment upon sterility, a subject which, in the light of his recent experience, he considered of much importance. In one of two cases the patient had an infantile uterus, and was operated upon by one of the most distinguished gynæcologists in New York, but she still remained sterile. She then came under the speaker's care, and he began the use of electricity. After two months she discontinued treatment for a time, when her husband told him she had become pregnant. About two weeks ago he had delivered her of a child.

Dr. Buckmaster did not doubt the good results of treatment by Dr. Freeman, yet he thought the use of the needle through the abdominal wall was dangerous. There had been some deaths, and if there had been only one, it was sufficient to justify the replacement of this method by the other. He thought the reduction in the size of fibroids resulted from disappearance of the watery elements, which did not return. He thought the current employed by Dr. Martin, of fifty milliampères, was sufficient.

Dr. McGinnis did not maintain that fibroids entirely disappeared, but it made no difference whether they did or did not; the symptoms were overcome, and that was sufficient. The patient knew nothing further about the tumor if any remained, except when it was of large size.

Book Notices.

Transactions of the American Surgical Association. Volume the Fifth. Edited by J. Ewing Mears, M. D., Recorder of the Association. Philadelphia: P. Blakiston, Son, & Co., 1887. Pp. xx–383.

The appearance of another volume of the "Transactions of the American Surgical Association" will be welcomed by all who have at heart the advancement of sound surgical knowledge. We have had occasion in former years to congratulate the association upon its prosperous condition and the excellent work it had done, and we are happy to say that the present volume shows no diminution in the value of the papers presented or in that of the discussions following their reading. The volume opens with the address of the president, Dr. McGuire, of Richmond, on "The Need and Value of Co-operative Work in Surgery." He concludes the address by making some suggestions in regard to changes in the constitution, among which is the abrogation of the code restriction so as to allow the association "to admit to fellowship some men in this country who are really needed in the association."

The chief work of the meeting was devoted to two subjects, namely, suprapubic cystotomy and laparotomy. The papers and discussions on these subjects occupy about two thirds of the volume.

Dr. Dennis, of New York, introduced the first subject with a paper upon "Suprapubic Cystotomy; its Technique, illustrated by Anatomical Preparations." Dr. John H. Packard read a paper upon "Suprapubic Cystotomy for Purposes other than the Extraction of Calculus." After giving a history of the operation, he related some cases in which it was performed for retention of urine from stricture of the urethra or enlarged prostate. Dr. A. Van Derveer, of Albany, followed with a paper entitled "To what Extent can we classify Vesical Calculi for Operation? With a Report of Cases and Remarks on Different Methods employed."

The discussion following the presentation of these papers was exceedingly interesting, and many points were brought out which had not been referred to in the papers.

The subject of laparotomy was introduced by a paper by Dr. J. Collins Warren, of Boston, on "The Process of Repair after Resection of the Intestine, and Intestinal Suture," based upon operations performed upon animals in the physiological laboratory of the Harvard Medical School. Dr. C. B. Nancrede, of Philadelphia, followed with a paper entitled "Should Laparotomy be done for Penetrating Wounds of the Abdomen involving the Viscera." Dr. R. A. Kinloch, of Charleston, related a case of "Pistol-shot Wound of the Abdomen treated by Laparotomy and Suturing the Intestines." Dr. W. W. Keen, of Philadelphia, concluded this portion of the subject by reporting a case of "Pistol-shot Wound of the Abdomen, involving the Liver, Stomach, Superior Mesenteric Artery and Vein, Small Intestines, and Kidney; Laparotomy." These papers on laparotomy are exceedingly valuable, and refer to diagnoses, experimental investigation, and theoretical considerations on the operation and its results. They will well repay careful reading. The remaining papers presented were as follows: "Report on a Case of Ventral Hernia successfully treated by Operation, with a Suggestion as to the Method of Operating," by Dr. J. Edwin Michael, of Baltimore; "The Prognosis of Sarcomata of the Breast," by Dr. Samuel W. Gross, of Philadelphia; "Medico-legal Aspect of Cranial and Heart Wounds," by Dr. D. Hayes Agnew, of Philadelphia; "Comparison between the Surgical Diseases of the White and Colored Races," by Dr. Louis McL. Tiffany, of Baltimore; "An Experimental Study of the Effects of Puncture of the Heart in Chloroform Narcosis," by Dr. B. A. Watson, of Jersey City; "Some Remarks on Hypertrophy of the Tongue, otherwise known as Lingua Vituli," by Dr. T. J. Dunott, of Harrisburg; "Vaginal Hysterotomy," by Dr. J. Ford Thompson, of Washington; "Synopsis of the Treatment of a Case of Aneurysm of the Left Subclavian Artery, in which Three Methods were successfully employed," and "A Femoral Aneurysm cured by Elevation and Flexion of the Limb," by Dr. T. G. Richardson, of New Orleans; "Wounds, their Aseptic and Antiseptic Management," by Dr. David Prince, of Jacksonville; "Splenectomy for Dislocated or Wandering Spleen," by Dr. James McCann, of Pittsburgh; and "A New Kolpoplastic Operation for Atresia or Defect of the Vagina," by Dr. Christian Fenger, of Chicago. We have read the volume with great pleasure and profit, and we think it a book that no surgeon can afford to be without.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—E. Onimus and C. Legros, "Traité d'électricité médicale." 2d ed. (17*fr.*) —— "Procès-verbaux, mémoires et discussions du deuxième Congrès français de chirurgie." (14*fr.*)

J. B. Baillière & fils, Paris.—J. Merley, "De l'albuminurie intermittente cyclique ou maladie de Pavy." (2*fr.* 50.) —— A. Herzen, "Le cerveau et l'activité cérébrale au point de vue psycho-physiologique." (3*fr.* 50.) —— C. Vibert, "Étude médico-légale sur les blessures produites par les accidents de chemin de fer." —— B. Ball, "La folie érotique." (2*fr.*) —— Bécono, "Anévrysme traumatique jugulo-carotidien." (0*fr.* 50.) —— J. Honnorat, "Processus histologique de l'œdème pulmonaire d'origine cardiaque." (3*fr.*) —— J. Béchamp, "Nouvelles recherches sur les albumines normales et pathologiques." (6*fr.*) —— A. Béchamp, "La théorie du microzyma et le système microbien."

A. Delahaye & E. Lecrosnier, Paris.—C. Bataille, "Traumatisme et névropathie." (4*fr.*) —— L. Baumel, "Maladies de l'appareil digestif." (9*fr.*) —— A. E. Bourgoin, "Traité de pharmacie galénique." 2d. ed. (14*fr.*) —— P. Durey-Comte, "Contribution à l'étude du rétrécissemen, congénital de l'artère pulmonaire." (3*fr.* 50.) —— P. Labadie-Lagravet "Urologie clinique et maladies des reins." (18*fr.*) —— P. Mavrikos, "Contribution à l'étude de l'érysipèle chez le nouveau-né." (1*fr.* 50.) —— P. Muller, "De la toux utérine." (2*fr.* 50.) —— Reliquet, "Rétrécissements péniens compliqués de cowperites supprimées." (0*fr.* 50.) —— A. Véroudart, "Des limites de la conservation après les traumatismes de la main." (4*fr.*) —— A. Ygouf, "De la rage paralytique." (3*fr.*)

O. Doin, Paris.—E. Maurel, "Recherches microscopiques sur l'étiologie du paludisme." (6*fr.*) —— P. Yvon, "Manuel clinique de l'analyse des urines." (7*fr.*) —— Chastaing and Barillot, "Chimie organique." (4*fr.*) —— T. Cruard, "Hygiène de l'enfance." (1*fr.* 50.)

G. Masson, Paris.—G. Carlet, "Précis de zoologie médicale."—Duboué, "Des progrès accomplis sur la question de la rage et de la part qui en revient à la théorie nerveuse."

G. Steinheil, Paris.—G. J. Witkowski, "Histoire des accouchements chez tous les peuples." 2 vols. (25 *fr.*) —— Metaxas-Zani, "Des anaplasties secondaires." —— Laborde and Houdé, "Le colchique et la colchicine." (5 *fr.*) —— P. Renault, "Manuel de trachéotomie." (1*fr.* 50.)

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Gynæcological Society. Vol. xii. For the Year 1887. New York: D. Appleton & Company, 1888. Pp. 512. [Price, $5.]

The Rules of Aseptic and Antiseptic Surgery. A Practical Treatise for the Use of Students and the General Practitioner. By Arpad G. Gerster, M. D., Professor of Surgery in the New York Polyclinic; Visiting Surgeon to Mount Sinai Hospital and the German Hospital, New York. Illustrated with Two Hundred and Forty-eight Engravings and Three Chromo-lithographic Plates. New York: D. Appleton & Company, 1888. Pp. 11–332. [Price, $5.]

A Manual of Practical Hygiene. By Edmund A. Parkes, M. D., F. R. S., etc. Edited by F. S. B. François de Chaumont, M. D., F. R. S., etc. Seventh Edition. Philadelphia: P. Blakiston, Son, & Co., 1887. Pp. xx–766.

A Synopsis of the Physiological Action of Medicines, prepared for the Use of the Students of the Medical Department of the University of Pennsylvania, with the Approval of the Professor of Materia Medica. By Louis Starr, M. D., and James B. Walker, M. D., assisted by W. M. Powell, M. D. Third Edition, enlarged. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 72. [Price, 75 cents.]

Rectal and Anal Surgery, with a Description of the Secret Methods of the Itinerants. By Edmund Andrews, M. D., LL. D., Professor of Clinical Surgery in the Chicago Medical College, etc., and E. Wyllys Andrews, A. M., M. D., Adjunct Professor of Clinical Surgery in the Chicago Medical College, etc. With Original Illustrations. Chicago: W. T. Keener, 1888. Pp. vi–111.

Photographic Illustrations of Skin Diseases. An Atlas and Textbook combined. By George Henry Fox, A. M., M. D., etc. Hand-colored Plates. Part I. Nearly One Hundred Cases from Life. Part II. Ninety Illustrations from Life. Second Series, complete in Twelve Parts. New York: E. B. Treat, 1888.

Hypertrophy of the Tonsil of the Tongue, with History of Cases. By J. W. Gleitsmann, M. D., etc. [Reprinted from the "Medical Record."]

Traumatic Hæmatoma of the Larynx. By J. W. Gleitsmann, M. D., etc. [Reprinted from the "Medical Record."]

Proceedings of the Nebraska State Medical Society at its Eighteenth and Nineteenth Annual Sessions, 1886 and 1887.

Les névropathies réflexes d'origine nasale. Par Albert Ruault. [Extrait de la "Gazette des hôpitaux."]

Notice sur l'hématoscope d'Hénocque. Indications techniques de ses applications, spectroscopie, diaphanométrie et photographie du sang, du lait, etc. Paris: G. Masson, 1886.

Méthode d'hématoscopie et appareils pour l'analyse spectroscopique du sang. Par M. le Dr. A. Hénocque.

Reports on the Progress of Medicine.

SURGERY.

By MATTHIAS L. FOSTER, M. D.

The Osteogenic Factors in the Development and Repair of Bone.—Macewen ("Annals of Surgery," Oct., Nov., 1887) demonstrates that osteogenic material is contained neither in the periosteum, as has been ordinarily believed for over a century, nor in the medulla, as some modern writers have advocated, but in the osteoblasts, either embryonic or fully formed, occupying the Haversian canals and spaces as well as the subperiosteal surface and the medullary spaces of the bone itself. This conclusion he arrives at by the successive demonstration of the following propositions: "(*a*) When the periosteum has been mechanically detached from an extensive area of an adult healthy bone and replaced after the lapse of some hours, union between the bone and the periosteum can take place without sloughing or observable augmentation ensuing. (*b*) The periosteum may be separated from the bone for a period of days by inflammatory products, after the withdrawal of which reunion between the periosteum and the bone may take place without necrosis ensuing, showing that the temporary separation of the periosteum from the bone, even as a pathological result, is not necessarily attended by death of bone. (*c*) The periosteum covering a portion of bone may be completely destroyed or permanently removed, yet the denuded bone may not only retain its vitality, but may throw out cells which will cover it, and form a new periosteum. (*d*) A portion of bone which has its continuity severed on all sides, and at the same time has had all its periosteum removed, is capable of living and growing. (*e*) Not only do detached portions of bone deprived of their periosteum live when reimplanted in their original position, but such portions are capable of living after transplantation. Parts of deeper layers of bone, which had no periosteal connection, have been transplanted and have lived and grown. (*f*) The periosteum does not initiate the reproduction of bone. Bones are subject to constant interstitial changes. (*g*) Bone may be regenerated independently of the medulla, which may itself be reproduced. (*h*) The histogenetic phenomena support the observations, showing that the periosteum does not generate bone." He explains the formation of osseous plaques on the inner surface of the periosteum after subperiosteal removal of bone by supposing a certain portion of the osteoblastic layer covering the surface of the bone to be removed with the periosteum. This is very likely to happen in the majority of cases in which such removal is necessary, because upon irritation of bone there is a large increase in the number of the round cells, mainly embryonal osteoblasts, occupying the Haversian canals, so that, passing in the direction of least resistance, large numbers congregate on the surface of the bone beneath the periosteum. The periosteum, in consequence of the irritation, becomes hyperæmic, softer, and more swollen, and the meshes of its lower stratum become loaded with osteoblasts. From such a center osseous nodules and plates may spring. In subperiosteal resection of the elbow joint a series of these osseous plates is usually found adherent to the inner surface of the periosteum. If these are left *in situ* new bone forms which interferes with the motion of the joint. This, he maintains, never happens if the periosteum is subjected to a careful scrutiny and all of the bony plates removed, union by fibrous tissue taking place.

Removal of the Tongue.—Barker ("Lancet," Oct. 15, 1887) describes the following modification of Kocher's operation for removal of epithelioma of the tongue: In the case described the disease occupied the right side of the tongue and the submaxillary lymphatic glands on the same side. Kocher's incision was first made downward from the lobe of the right ear to the body of the hyoid bone, then horizontally to the median line, and then upward to the symphysis. The involved glands were then dissected out, and the lingual artery was tied. The operator then attacked the tongue from within the mouth, detached it from the jaw, and, when it was well isolated, cut it obliquely across at its root. The first wound was then open to the mouth and pharynx. A rubber feeding-tube was passed well down into the œsophagus, the outer end being fastened to the right ear. The entire area of operation was then cleaned, dried, and dusted with iodoform, and the neck padded with salicylic wool. The patient was by this means fed by the stomach, with no disturbance of the dressings and no pain for sixteen days, until the floor of the mouth was nearly healed. As no food passed through the mouth, the wound could be treated in the same manner as a similar wound elsewhere. Healing was rapid and unaccompanied by any trouble.

Lymphoma.—Beale (*ibid.*) reports a case of slowly progressive lymphoma affecting the larynx, eyelid, cerebral membranes, and cervical glands. It is of interest to note that the lymphomatous material was limited in these unusual situations to those parts in which adenoid tissue normally exists. A large growth from the dura mater had eaten a hole through the skull, through which it protruded, causing a fluctuating swelling in the forehead. The subconjunctival swelling grew slowly for about six months, when it was excised, and found to be composed of lympho-sarcomatous material. A tonsil and a portion of the thickened tissue of the larynx were removed. All of the operative procedures were quite successful as far as they went, gave relief to the patient, and were not followed by return of the growths or increased activity of the remainder. Hence Beale suggests that in the more chronic cases of lymphomata it may be possible to give much temporary relief and prolong life by operative procedures even when they are adopted when there is no imminent danger immediately threatening the life of the patient. The painless eating away of the frontal bone by the tumor is also worthy of notice.

Cerebral Hæmorrhage.—Braddon (*ibid.*), after a consideration of the dynamics of cerebral hæmorrhage, concludes that the destructive effect of an intracerebral hæmorrhage is due to the hydraulic force of the leakage; that, as the disruptive power increases in hydrostatic ratio, every second of time is of paramount importance; and, lastly, that there is a hopeful method of treatment. The indication for treatment is to lower the blood-pressure within the cranium, and this is not accomplished by the procedures usually followed. He favors Trousseau's plan of making the patient sit up, eat, and, if possible, exercise. Nitrite of amyl, the nitrites generally, and pilocarpine decrease tension. Heat applied to the hypogastrium acts similarly. But the chief treatment should consist of compression of one or both carotid arteries, in the same manner as is done to check otherwise uncontrollable hæmorrhage during operations on the brain. In cases evidently near a fatal issue he recommends trephining and opening into the outpoured mass of blood. The means for checking the hæmorrhage should then be applied.

The Histology of Reunited Intestine.—Bishop ("Med. Chron.," Oct., 1887) makes an interesting contribution to this subject, and illustrates it with seven microscopic photographs of various stages of repair. He considers that the process of union may be divided into three distinct stages passing almost imperceptibly into one another. These he names primary, or peritoneal union; secondary, or the stage of contraction; and tertiary, or cellulo-fibrous union. In some cases he found the union complete at the end of the third month, in others it was incomplete after four months. The first stage is rapid, often being complete in forty-eight hours, commencing almost as soon as the bowel is at rest if septic matter is absent. An effusion of plastic lymph takes place, which gradually becomes organized in the same manner as other similar deposits, and forms connective tissue uniting the opposed surfaces with each other and to any other peritoneal surface with which it happens to be in contact. It springs from the serous coat alone, the connective-tissue granulations covering the muscular coats being too far apart to have any action in retaining the two divided surfaces in position, and therefore taking no part in the primary stage of union. The second, or intermediary stage, is characterized by contraction of the connective tissue uniting the peritoneal surfaces. In the final stage this connective tissue has for the most part disappeared, while the subserous and submucous layers appear united by cellulo-fibrous bands forming a distinct commissure, which becomes firmer and less open at the upper and lower angles as contraction goes on, until finally the cicatrix becomes almost imperceptible. As the permanency of the primary adhesions depends largely on the persistence of peritoneal irritation kept up by the sutures, the author considers silk to be the best material to employ, for catgut quickly softens and is absorbed; but these should not project beyond the line of union, since, if they do, they will probably produce lasting union with the surrounding parts. If septic matter should be present, or if the lymph should be too weakly organized, the barrier may be broken down and general peritonitis result from the introduction of septic material into the peritoneal cavity.

Exophthalmic Goitre.—At a meeting of the Med.-Chirurg. Society of Edinburgh ("Edin. Med. Jour.," Oct., 1887) Professor Frazer showed a patient who ten years before had presented all the symptoms of exophthalmic goître. At that time Professor Lister removed all he could of the thyreoid gland by excision and scraping. Five days afterward the pulse-rate had fallen to 72, and the heart's action was regular. In a few weeks the exophthalmia had become markedly reduced. Eight months afterward the patient began to have convulsions at each menstrual period. These continued for two or three years, growing less severe until they ceased. There was no evidence of myxœdema to be found, but a portion of the thyreoid gland, probably the isthmus, which was not removed at the operation, could be detected on palpation.

Causes of Subcutaneous Inflammation and Suppuration.—Grawitz and De Bary ("Archiv für patholog. Anat. u. Physiol. u. für klin. Medicin," Bd. cviii) report some very interesting experiments showing that the introduction of pus bacteria into the subcutaneous tissues is not in itself sufficient to cause suppuration, but that other factors must be present to furnish a suitable condition for their growth and multiplication. Throughout their experiments they carefully cleansed and disinfected the integument at the proposed site of injection, employed a thoroughly clean needle of small caliber, and immediately closed the wound made by the needle with iodoform collodion. It was found that with these precautions large quantities of neutral fluids were absorbed after subcutaneous injection, both when sterilized and when infected with the *Staphylococcus pyogenes aureus* or *citreus* to a greater extent than the most careless experimenter would ever accidentally infect sterilized fluids. They therefore consider the wound made by the needle to be the point of danger, as here the bacteria are held, multiply, and spread through the tissues, while those in the meshes of the subcutaneous tissue are absorbed before they can do any damage. In this manner they explain the observation of Uskoff that suppuration was produced by the injection of large quantities of neutral fluids, and negative the assertion of Orthmann that the suppuration so produced was due to the admixture of bacteria. In some cases the integument over the injected fluid died, and in these cases suppuration supervened. Histologically, the connective-tissue cells at the site of the injection were found swollen and nuclear. When the solution had been colored with methyl-blue, the coloring could be plainly seen in the sheaths of the neighboring nerves, demonstrating that narcotic substances so injected probably exercise a local effect. Subcutaneous injections of certain germicidal irritant fluids—such as a solution of bichloride of mercury (1 to 1,000), absolute alcohol, and tincture of iodine—were followed by severe inflammation, but no suppuration unless the integument became necrotic. After successive injections of solutions of chloride of zinc, varying from one to five per cent., into the same portion of a muscle of a rabbit, a fluid impregnated with *Staphylococcus pyogenes aureus* was injected into the same place. The muscle was found disintegrated, but there was no pus. After the injection of a few cubic centimetres of a five-per-cent. solution of nitrate of silver into a dog, an abscess was formed containing pus, from which no bacteria could be obtained. Of solutions not germicidal, but able to arrest the development of bacteria, acids and alkalies produced no suppuration, even after the addition of bacteria, though five-per-cent. solutions of the caustic alkalies reduced the tissues to a soft hæmorrhagic mass. Injections of 1-to-4 solutions of ammonia caused the formation of pus, cultivations of which in agar-agar remained sterile. When bacteria were injected with it, flourishing colonies of the same form of bacteria as those injected could be cultivated from the pus. Hence they conclude that ammonia, in sufficient concentration to cause severe inflammation and suppuration, furnishes in the subcutaneous tissues a suitable material for the growth of bacteria. Oil of turpentine they determine to be a germicide of the first rank. Instruments immersed in it for two minutes are, they maintain, absolutely aseptic, and are not injured as by solutions of bichloride of mercury and carbolic acid. Injections of this oil failed to produce suppuration in rabbits and guinea-pigs, but in dogs abscesses were formed which contained a peculiar pus with no bacteria. Small amounts of croton-oil produced fibrinous exudations, but no pus; larger quantities caused poisoning. These observations show that certain chemical substances, in the right quantity and strength, can, without bacteria, produce suppuration in certain classes of animals, or may render the tissues suitable for the growth of bacteria which, injected alone into the normal subcutaneous tissue, can not, unaided, cause a suppurative inflammation.

Sudden Death after a Blow on the Testicle.—Ivanoff ("Bulgarische med. Spir."; "Ctrlbl. f. Chir.," No. 30, 1887) records the following case: A middle-aged man was engaged in an altercation with a woman in the street when she struck him a violent blow on the scrotum. He sank at once unconscious and died in a few minutes, before the surgeon could arrive. At the autopsy nothing abnormal except slight hyperæmia of the brain was found to account for the death. Ivanoff considered death to have resulted from syncope due to the excessive pain caused by the blow on the testicle.

Spontaneous Expulsion of a Vesical Tumor after Perineal Section.—Brahl ("Progrès méd."; "Ctrlbl. f. Chir.," 1887, No. 30), in a case of vesical tumor, performed perineal section, introduced his finger, and felt a hard incrusted mass lying behind the neck of the bladder. This slipped from his grasp and he was unable to find it again. The next day the patient expelled with much pain a tumor five centimetres long by two centimetres broad and thick, covered with calculous material. The tumor was gray, of homogeneous structure, and poorly supplied with blood-vessels.

Primary Carcinoma of the Kidney coincident with Renal Calculus.—Hartmann performed lumbar nephrotomy on a man who presented the symptoms of renal calculus to a marked degree. An abscess was opened and a large calculus, together with several small ones, was removed. A few days later the patient died. On autopsy, a carcinoma of the kidney was found involving the upper part of the ureter. Secondary deposits extended through the diaphragm into the pleura of the same side and involved the liver.

Bullet Wound of the Liver.—Lediard ("Lancet," Oct. 22, 1887) details a case in which a bullet entered the seventh intercostal space a little external to the mammary line and made its exit in the eleventh intercostal space two inches from the spine. There was considerable discharge containing bile, as shown by chemical tests. There was some pneumothorax and afterward empyema. The bullet probably passed through the convex surface of the liver, perforated the diaphragm twice, and grazed the lung. The patient recovered.

Miscellany.

The William F. Jenks Memorial Prize.—The first triennial prize, of two hundred and fifty dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Diagnosis and Treatment of Extra-uterine Pregnancy." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with obstetrics, or the diseases of women, or the diseases of children"; and that "the trustees, under this deed for the time being, can in their discretion publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may in their judgment be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or, if in a foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., addressed to Ellwood Wilson, M. D., Chairman of the William F. Jenks Prize Committee, before January 1, 1889. Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right to make no award if no essay submitted is considered worthy of the prize.

Quack Advertisements in Religious Newspapers.—From time to time medical men and medical journals have protested against the prostitution of the columns of religious newspapers to the use of advertisers of quack nostrums. This protest does not apply to temperately worded representations of what seems to have been accomplished by, or what may reasonably be expected of, a remedy or device for the cure of disease or injury. But it does apply to advertisements couched in language which bears the stamp of falsehood on its face, or which is of such a character as to arouse suspicion in the mind of an intelligent man, uninfluenced by a money consideration. The editors of most religious journals are, as a rule, men of so much intelligence that they will hardly attribute to trade-jealousy alone the objection which medical men have to the recommendation of "sure cures" for baldness, fits, rupture, consumption, and so on, to persons who are apt to regard their religious teachers as safe guides in matters of health or disease, and who are not sufficiently familiar with the subtleties of the newspaper business to distinguish between the responsibilities of the editor and those of the publisher. As a fact, most readers of periodicals have the impression that the advertisements they contain are indorsed by the editor. Advertisers rely upon this fact, and we can not understand the casuistry which satisfies the conscience of a man who edits a periodical, ostensibly devoted to religion, which replenishes its coffers with the price of palpable falsehoods. If it were true that a religious paper could not be financially successful without taking money for the advertisement of worthless or delusive remedies, a course might be suggested worthy of the main object of these papers. But it is not true, for there are a few happy illustrations of the fact that, even in a religious newspaper, "Honesty is the best policy." We call the attention of our large circle of readers to this matter in the hope that they will use their influence to put an end to what we regard as a serious blemish in religious newspapers, and one which injures the good reputation which they ought to enjoy. And we call the attention of those religious newspapers to which our remarks may apply to this matter in the hope that we shall not have to recur to it in a more explicit manner.—*Medical and Surgical Reporter.*

College Athletics.—Several members of the faculty of Cornell University have written letters on this subject to the editor of the "Cornell Era," among them Professor Burt G. Wilder, who says: "What compensating good results from intercollegiate athletics? The 'crews' and 'teams' embrace perhaps fifty out of our thousand students. Admitting, for the sake of argument, what is far from proved, that 'training' is conducive to real and permanent health, *it affects directly only five per cent. of the whole number of students*, and those, too, who are already exceptionally sound and strong, leaving the vast majority to the dubious privileges of supplying money—and noise."

The Cornell Professors' Private Libraries.—According to the "Cornell Era," among the scientific libraries belonging to individual members of the faculty are Professor Comstock's 700 volumes on entomology, Professor Gage's 500 on microscopy, histology, and physiology, and Professor Wilder's 1,500 on comparative anatomy, especially that of the brain.

The New York Academy of Medicine.—It was announced at the last meeting of the Academy that Dr. Edward L. Keyes had been made corresponding secretary, to succeed the late Dr. Carpenter.

Changes of Residence.—Dr. William S. McMurdy has moved to No. 135 West Forty-second Street, and Dr. Henry S. Oppenheimer to No. 49 East Twenty-third Street.

The Philadelphia Clinical Society.—At the annual meeting, held on the 27th of January, officers were elected as follows: President, Dr. Mary E. Allen; vice-presidents, Dr. Clara Marshall and Dr. Marie B. Werner; treasurer, Dr. L. Brewer Hall; recording and reporting secretary, Dr. Mary Willits; corresponding secretary, Dr. Emma Musson; councillors, Dr. Amy S. Barton, Dr. I. G. Heilman, Dr. A. Victoria Scott, Dr. Edward E. Montgomery, and Dr. James B. Walker.

A Congress of Obstetrics, Gynæcology, and Pædiatrics, says the "Progrès médical," is to be held in Madrid, in April, under the auspices of the *Sociedad Ginecológica de España.*

The Turin Academy of Sciences, according to the "Deutsche Medizinal-Zeitung," has awarded the grand prize of 12,000 francs to M. Pasteur.

The Health of the State of New York.—According to the State Board of Health's "Monthly Bulletin," the whole number of deaths reported for the month of December, 1887, was 7,886, including 1,500 (19 per cent.) from diseases classed as zymotic. From diarrhœal diseases the ratio was 9·85 in a thousand; from typhoid fever, 13·19; and from croup and diphtheria, 111·97.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending February 3d:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending January 14th corresponded to an annual rate of 23·3 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Sunderland, viz., 14·2, and the highest in Manchester, viz., 34·9 in a thousand. Small-pox caused 27 deaths in Sheffield, 1 in Bristol, 4 in Leeds, and 1 in London.

London.—One thousand nine hundred and forty deaths were registered during the week ending January 14th, including 25 from measles; scarlet fever, 25; diphtheria, 16; whooping-cough, 152; enteric fever, 22; and diarrhœa and dysentery, 11. Diseases of the respiratory organs caused 579 deaths; different forms of violence, 69; and 11 suicides were registered. The deaths from all causes corresponded to an annual rate of 23·6 in a thousand. In greater London 2,458 deaths were registered, corresponding to an annual rate of 23·2 in a thousand of the population. In the "outer ring" 15 deaths from diphtheria; measles, 10; fever, 6; and whooping-cough, 37, were registered.

Ireland.—The average annual death rate represented by the deaths registered during the week ending January 14th in the sixteen principal town districts of Ireland was 35·4 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 14·4, and the highest in Dundalk, viz., 48 in a thousand.

Dublin.—Two hundred and forty-two deaths were registered during the week ending January 14th, including 4 from measles; whooping-cough, 7; diphtheria, 2; scarlet fever, 10; typhus, 1; enteric fever, 4; diarrhœa, 3; and dysentery, 1. Diseases of the respiratory organs caused 60 deaths. Six accidental deaths were registered, and in 43 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 35·7 in a thousand.

Scotland.—The deaths registered in eight principal towns during the week ending January 14th corresponded to an annual rate of 24 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 10·8, and the highest in Paisley, viz., 31·2 in a thousand. The aggregate number of deaths registered from all causes was 607, including 26 from measles; diphtheria, 8; whooping-cough, 26; fever, 8; and diarrhœa, 10.

Hobart Town.—Forty-six deaths were registered during the month of November, including 3 from enteric fever.

Calcutta.—One thousand and forty-one deaths were registered during the month of October, 1887, showing an annual ratio of 28·8 in a thousand of the population. There were 73 deaths from cholera, against 47 in the preceding month.

Havana.—Two deaths from yellow fever and 57 from small-pox were reported for the week ending January 21, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	January 14.	2,260,045	1,127	..	....	8	....	33	4	24
Glasgow	January 14.	545,678	253	..	....	....	....	3	....	6
Amsterdam	January 7.	389,916	180	..	....	...	....	....	....	4
Amsterdam	January 14.	389,916	215	..	....	....	....	....	....	5
Copenhagen	January 3.	290,000	158	..	....	....	....	....	6	4
Munich	December 31.	269,000	139	..	....	....	....	....	4	7
Munich	January 7.	269,000	147	..	....	....	....	1	2	6
Palermo	January 15.	250,000	123	..	....	....	....	....	1	3
Genoa	January 14.	179,415	139	..	....	9	....	....	1	....
Leipsic	January 14.	170,000	44	..	....	....	....	...	1	3
Trieste	January 7.	154,500	105	..	...	7	....	1	1	2
Bremen	January 7.	122,000	48	..	....	....	....	....	....	1
Havre	January 7.	112,074	64	..	....	1	....	3	....	....
Mayence	January 7.	65,701	27	..	....	....	....	....	....	1
Merida	January 16.	48,711	16	..	....	....	....	2	....	....

UNITED STATES.

New York.—The following is a report of an analysis of the water of New York Bay, by Assistant Surgeon J. J. Kinyoun, Marine-Hospital Service:

The cities and towns discharging their sewage into the New York Bay have an estimated population of 3,000,000 of people. In view of this fact, a chemical and biological examination of the bay water was undertaken, for the purpose of determining its contents, and also to find how long it would support life of the different micro-organisms, more especially that of Asiatic cholera. Accordingly, specimens were obtained at different places, being collected in sterilized flasks. The first was obtained at the Narrows; the second alongside the steamship Britannia (lying in quarantine); the third at Hoffman's Island; and the fourth at Swinburne Island. These different specimens were collected within thirty minutes, and just at incoming tide.

Chemical examination of one litre:

Narrows—	
Chlorides of potassium and sodium	20·8 grammes;
Carbonates	trace;
Iodine	"
Free ammonia	"
Albuminoid ammonia	0·158 gramme.
Steamship Britannia—	
Chlorides of potassium and sodium	20·82 grammes;
Carbonates	trace;
Iodine	"
Free ammonia	"
Albuminoid ammonia	0·158 gramme.
Hoffman's Island—	
Chlorides of potassium and sodium	21·64 grammes;
Carbonates	trace;
Iodine	"
Free ammonia	"
Albuminoid ammonia	0·158 gramme.
Swinburne Island—	
Chlorides of potassium and sodium	21·814 grammes;
Carbonates	trace;
Iodine	"
Free ammonia	"
Albuminoid ammonia	0·158 gramme.

Reaction was slightly alkaline.

Plate cultivations were made from each of the different specimens, and at the end of five days had developed colonies of bacteria. Examination showing the number of micro-organisms:

Narrows	4,500	to cubic centimetre;
Britannia anchorage	10,200	" "
Hoffman Island	9,600	" "
Swinburne Island	11,700	" "

The micro-organisms found in each were several varieties of micrococci and one of a large bacillus. These were transferred to cultivation-tubes for further observation. On November 12th, test-tubes, partly filled with sea-water, were thoroughly sterilized and inoculated in the usual manner with pure cultivations of the spirilla of Asiatic cholera, and also of Finkler and Prior. Cultivation-tubes were inoculated from the water from day to day for the purpose of determining the longevity of the growths. During the first five days the water seemed to exert a slight inhibitory influence over their development. It was further observed that until January 20th, a period of sixty-nine days, the characteristic growth of the spirillum of cholera Asiatica could be produced in peptone gelatin. That of Finkler and Prior has a yet longer lease of life.

Examinations made from time to time, both by the plate method and direct staining, show conclusively that these spirilla have not only been kept alive, but have also greatly increased in numbers.

After closely studying the currents of the upper bay, I am led to believe that, if dejecta from cholera patients should be thrown into the lower bay, cholera could gain a foothold on the contiguous shores, where every condition favorable to its development and propagation sometimes exists.

THERAPEUTICAL NOTES.

Oil of Wintergreen.—Oil of wintergreen, says the "Lancet," is identical with a volatile oil obtained by distilling the bark of *Betula lenta*, the sweet birch, or black birch, or cherry birch, or mountain mahogany of the middle and northern United States and Canada, and also with the oil derived by distillation with water from *Spiræa ulmaria*, or meadow-sweet, the principal agent in all being methyl salicylate. Like other salicylates, these oils possess the property of causing ringing noises in the ears when a sufficient dose is given, which varies for different individuals. Ten minims from three to six times a day is the usual quantity administered, suspended in simple or syrupy water or cod-liver oil. These oils are not so useful in acute rheumatism as in the milder attacks of chronic rheumatism or rheumatic gout. Dr. Squibb strongly recommends them in the "Ephemeris," vol. iii, No. 2.

ANSWERS TO CORRESPONDENTS.

No. 142.—The *pied d'alouette des champs* is the *Delphinium consolida* (larkspur).

No. 143.—The next meeting of the American Gynæcological Society will be held in Boston on Tuesday, Wednesday, and Thursday, the 18th, 19th, and 20th of September.

No. 144.—Ovulation and menstruation are very well treated of by Mr. Lawson Tait, in his work entitled "The Pathology and Treatment of Diseases of the Ovaries."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ON THE USE OF THE VAGINAL TAMPON IN THE TREATMENT OF CERTAIN EFFECTS FOLLOWING PELVIC INFLAMMATIONS.*

By THOMAS ADDIS EMMET, M. D.,
SURGEON TO THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK, NEW YORK.

At the suggestion of our president, we are to consider the value of a certain mode of treatment with which the name of the late Dr. V. H. Talliaferro, of Atlanta, Ga., is so closely connected. Without any knowledge of my views on the subject, I was requested to treat of it in the affirmative. The president either overestimated my power to present the subject with equal plausibility from either standpoint, or he had come to the conclusion that there would be no opposition to the mode of treatment.

I must confess that until recently I had been greatly prejudiced against the practice of packing the vagina for the removal of pelvic inflammations. I had seen a great deal of damage done in the practice of others, and the patients who may have been benefited had not then come under my observation. It seemed evident to me that too much was alleged for the method so long as no fixed rule had been determined as to the condition for which the practice would be beneficial. But, notwithstanding my prejudice, I have endeavored to gain the needed information, and, as a result of my observation, I hope that I can now present a sufficient foundation upon which, with the aid of the experience gained by others, we may rest, for the future, the merits of this mode of treatment. I must, however, express my dissent from the reasons given by Dr. Talliaferro, and I do not consider his method of application the one likely to be followed by the most beneficial results. But, before entering upon a consideration of the subject proper, I must present, briefly, an outline of my course of study bearing upon pelvic inflammations in the female. It has extended over many years, and it is necessary to pass this in review to show that the deductions drawn by me, and to be presented hereafter, are consistent with my observation and experience.

As the first advocate for the use of hot-water vaginal injections in the treatment of pelvic inflammations, I think I may maintain, without fear of being deemed egotistical, that their employment was a great advance. Yet, in common with others, I have long realized the fact that under certain conditions the use of hot injections is but palliative, and is occasionally inert. When properly employed, they seldom fail to soothe and quiet the nervous system, but occasionally it is found that no permanent benefit follows the long-continued use of the agent. It was this failure which led me years ago to study closely the condition of the pelvic blood-vessels in disease. In the course of my observations I attempted to inject, post mortem, the vessels in the female pelvis, but I labored under the disadvantage of knowing nothing of the previous histories of the subjects operated upon. This difficulty I endeavored to meet by selecting several cases where the cervix had been lacerated, and I expected to find with this lesion a condition which in life had been accompanied at some time with more or less pelvic inflammation. I detected little or no change in the arteries, but was somewhat surprised to find that it was impossible to thoroughly inject the veins, as they seemed at some points to have lost all definite form, and the material employed for injection became easily extravasated.

At a later date, and in a paper on "The Philosophy of Uterine Disease," which was published in the "New York Medical Journal," July, 1874, I made the following statement: "We must appreciate that in no other part of the body have we such a matted network of vessels in the same space. In consequence of the erectile character of all the tissues, these vessels become varicose from any continued obstruction to the circulation, and have an almost incredible venous capacity. As a stream of water will saturate the ground and lose itself in a marsh, so will the circulation through the pelvic cellular tissue, and become in disease equally sluggish. . . . In this overdistended condition of the veins the balance is lost, and they are no longer able to return to the general circulation the quantity of blood received by them from the arterial capillaries. . . . Unless we can control the pelvic circulation, and at least impart a temporary tone to these vessels, it will be found in the end that little has been accomplished."

In a paper presented by me at the last meeting of the American Gynæcological Society, and which many of you now present will recall, I referred to some observations which I had made as to the result of prolapse of the uterus and of traction upon the pelvic blood-vessels. I pointed out that, as the veins were without valves, their extremely tortuous courses were necessary both as a check upon the circulation and to overcome the action of gravity. I stated I had observed, when making traction upon the connective tissue about a vein in the living subject, that the diameter of the vessel would rapidly increase in proportion as its tortuous course was made a straight one. In this connection I showed that it was evident, as the uterus became prolapsed in the pelvis and the veins were consequently straightened out, that they became proportionately distended. The caliber of the arteries, on the contrary, was not affected by any degree of prolapse until it had become a partial procidentia. As the uterus began to escape from the vaginal outlet, for the first time the diameter of the arteries was influenced by the traction, and with the effect of lessening their caliber so as thus to greatly reduce the amount of blood circulating in the pelvis. But, until the point of procidentia had been reached, the degree of prolapse acted as a source of irritation to proportionately increase the quantity of blood forced by them into the already overdistended veins. These became less and less able, as the degree of prolapse increased within the limit, to advance the current of blood, which would become nearly stagnant at certain points.

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* Read before the Alumni Association of the Woman's Hospital in the State of New York at its fourth meeting.

It will also be remembered that in this paper and in a previous one I stated as my opinion that what had been generally termed "thickenings in the broad ligaments" were, as a rule, but dilated and overdistended veins; that the veins, following their tortuous courses through the connective tissue of the pelvis, receive, in a state of health, a uniform support to their coats from the natural elasticity of the tissues surrounding them. Therefore the circulation through these vessels would, in a state of health, be so regulated from this uniform pressure that it would be impossible for the veins to become overdistended. When, however, an injury had been received from childbirth, or when a local peritonitis with adhesions had existed, so that the integrity of the pelvic fascia had become impaired, the needed elastic support from the connective tissue would be lost and the veins must become overdistended. This is the condition, from one or other cause, so frequently met with in practice, and for its relief I pointed out the principle that this varicose condition of the veins could only be corrected by such means as were fitted for "taking in the slack," as it were, of the relaxed fascia, and thus regaining the lost support to the vessels. This support might be obtained, in many instances, after injury, by repairing the floor of the pelvis and thus restoring the proper degree of tension for the pelvic fascia and connective tissue. In other cases the aid of a pessary would accomplish the same end, when properly fitted. I believed its action to be a means for taking in this slack or overstretch, and that it gave the relief by bringing this about, and by lessening the degree of prolapse, more than by a change of version.

One more point remains to be considered. Whenever a local peritonitis occurs in the pelvis and adhesions form, the line must be shortened and in the opposite direction there must necessarily be a proportionate slacking up of the connective tissue. The inflammation from the peritonæum may not involve this tissue to any serious extent, but, in consequence of the adhesions, the natural elasticity of the neighboring tissue becomes thus impaired and rapid distension of the veins follows. Adhesions forming between the opposing surfaces of the inflamed peritonæum have the effect naturally of crowding the uterus lower in the pelvis and thus causing more or less of a prolapse. If, as is frequently the case, the inflammation is situated in Douglas's *cul-de-sac*, we should have, with the adhesion of opposite surfaces, a retroversion in addition to a prolapse of the uterus.

I have called attention elsewhere to the fact that when cellular tissue in different parts of the body has been once inflamed it seldom, if ever, regains its vitality. That particular tissue must either be absorbed, or it must break down into pus; it disappears, and the space, or cavity, which would otherwise remain is filled up through the natural or inherent elasticity of the neighboring tissues, or by adhesive inflammation. The cellular tissue situated between the folds of the broad ligament is essentially isolated from the connective tissue in the other parts of the pelvis; therefore if it is once destroyed it can not be supplied from elsewhere. But any inflammation of sufficient extent to destroy this tissue must involve the peritonæum covering it. Peritoneal adhesions form as a consequence, the ligament is flattened out by the traction so that the walls of the vagina and the tube on that side approximate, and a lateral version of the uterus to the injured side remains as a permanent deformity.

We have now reached a point in the consideration of the subject when the following query may be presented: Under what conditions are we likely to obtain the best results from the use of the hot-water vaginal injections, and when might we expect a good result from the uniform pressure which will be exerted by properly tamponing the vagina? No other mode of treatment yet known can accomplish so much as is gained by the use of hot-water vaginal injections in all acute pelvic inflammations. The hot water acts as a poultice in exciting contraction of the arterial capillaries. Its continued use can diminish the circulation in the parts with which it is brought in contact, as is done in the hands and arms of a washerwoman while in the exercise of her vocation. Nearly thirty years ago I recognized the fact that the reaction from a continued application of heat was contraction in the muscular coats of the arteries, and hence its application and value in lessening the supply of blood going to the seat of an acute inflammation.

The use of the hot-water injections is invaluable in the treatment of all stages of inflammation involving the cellular or connective tissue of the pelvis, in lymphangeitis, in phlebitis, and in the early stages of pelvic peritonitis. On the other hand, the vaginal tampon in my experience has only been beneficial after all acute symptoms have subsided. If this one feature is not recognized as a cardinal point, the indiscriminate use of this means of treatment will always be attended by unsatisfactory results, and with much unnecessary suffering to the patient.

The only class of cases in the treatment of which I have derived any special benefit from the use of the vaginal tampon has been where I have supposed the blood-vessels had degenerated into a varicose condition, and where this state of the veins has been brought about, as I have shown, from the effects of local peritonitis with adhesions, from the loss of the connective tissue, and from injury where the fascia has been involved.

Let us now consider the use of the tampon in the condition I have described as being the one fitted for its action. I have laid down the rule that its use can accomplish no good but may do much harm, so long as any inflammatory symptoms can be detected. We must trust to the use of the thermometer to show the absence of an elevated temperature in the pelvis, and to the want of other symptoms indicative of existing inflammation. In the absence of other symptoms we must exclude to a great extent the presence of pain on pressure as an evidence of active inflammation, its chief value then being but an indication of the manner in which the tampon should be applied.

Where adhesions have formed and the natural elasticity of the tissues has been impaired, the introduction of the speculum, or pressure made with the finger at certain points, must give rise to more or less pain. Traction is thus made through the connective tissue on the peritonæum and along some shortened line of adhesion.

But we are to be all the more careful when pain does exist under these circumstances, through fear of setting up a fresh attack of peritonitis. The most important point that we have to consider is to ascertain, if possible, the *modus operandi* of the tampon, for only by the possession of this knowledge can we determine upon the fit subjects for its application. Experience certainly teaches that by the use of hot-water vaginal injections contraction of the arteries is excited, and that these injections are most useful in active inflammations. By the same means we have ascertained that the tampon does positive harm when not indicated, acting as a source of irritation so long as any acute inflammation exists, and that it does not lessen the circulation through the arteries, as their coats are not sufficiently compressible.

We therefore can draw but one conclusion, and in doing so we reach the point that the tampon acts mechanically, by compressing the dilated veins and by lifting the uterus to its natural position in the pelvis, so that the circulation between the arteries and the veins may be equalized. If the floor of the pelvis has been injured in childbirth, one or both agents may have to be employed to prepare the woman for the needed surgical operation. And it is only by the proper execution of this operation that we can restore the fascia and connective tissue in the pelvis to a state of integrity, and thus indirectly give the necessary support to the vessels.

But we have a different condition to deal with in treating the effects of a local peritonitis. As soon as the adhesions have been separated by the steady pressure of the tampon the pelvic tissues begin to regain their tone. And as the prolapse is corrected by the use of the tampon, and the uterus is steadily maintained in its natural position, the smaller veins are able to regain their natural and tortuous course with the improved condition of the connective tissue. So far in the treatment of a case the use of the tampon is most satisfactory, but as we advance the progress becomes slower. We have at last reached the point where the permanency of our previous success in the treatment of the case must rest upon our being able to effect a radical change in the condition of the degenerated venous diverticula. But it is just in this condition where I believe we gain the chief advantage in the use of the vaginal tampon. We should not, however, be misled by expecting too much, and we must realize that we can only gain permanent good through use of the agent after a long and tedious application, which may extend over the course of months. Moreover, the patient must be, as a rule, favorably situated in a hospital for receiving the treatment, and the operator is only able to do full justice to the patient in proportion to his experience.

I am unable to understand how anything is accomplished unless these diverticula are destroyed through the long, steady, and uniform pressure which is maintained by the tampon when properly applied. It is impossible to suppose that these degenerated vessels ever could regain their tone. A certain amount of shrinkage doubtless takes place after they have been for a long time kept from being overdistended. But the continued pressure exerted by the tampon is but the application of a principle which has been long employed in general surgery. It is reasonable to suppose, therefore, that the contents of these vessels become gradually organized, more or less adhesive inflammation is excited by pressure, and eventually the tract throughout is obliterated.

The length to which my paper has already extended will not admit of my going into a recital of the cases which I have treated. A brief history of the following one, however, I think will not be without interest and profit:

Shortly after the 1st of October I admitted into my private hospital a woman about thirty-five years of age who had given birth to several children, nearly all of whom were born by unusually rapid labors. She had got up very slowly after the last labor, and the symptoms were clearly given of the existence of some pelvic inflammation for long afterward. After having devoted more than five years to receiving local treatment, and after many efforts had been made to fit a pessary, she became a confirmed invalid from her inability to get about. At my first examination I found a doubly lacerated cervix presenting just within the vaginal outlet, which latter was unusually relaxed and open. There existed an exaggerated prolapse of both vaginal walls, and the dark color of the mucous membrane showed clearly that there was a marked venous congestion throughout the pelvis. There was a small fibroid on the posterior wall of the retroverted uterus, and below it lay both ovaries very much enlarged, with a small mass on each side of them, which seemed to be the fimbriated extremity of the Fallopian tube. Every portion of the pelvis within reach of the finger was tender on pressure, but no distinct inflammatory product could be detected except in the region of the utero-sacral ligaments. The sensation conveyed to the finger was as if the pelvis was filled with air along the sides of the vaginal walls. As the patient lay on her back it was impossible to reduce the uterus, and as one portion of the vagina was pushed up it only caused some other part to roll out. The knee-and-chest position gave her great relief, the uterus easily returned to its place, the vagina dilated to its ordinary size, and in a few moments after her assuming this position the mucous membrane regained its natural color. Her general health was good, and she was free from suffering so long as she maintained the recumbent position. But on assuming the upright one she suffered from nausea and felt "as if she would drop to pieces." For several years she had had the hot-water vaginal injections properly administered. These at first gave her relief, but for a long time there had been no apparent benefit, and they were finally abandoned as the space in the vagina lessened.

At my first examination the case seemed so hopeless that I gave it as my opinion that it would be necessary to remove the ovaries. She positively declined submitting to the operation, as she had done before in consulting others. In twenty-four hours I satisfied myself that no good could be accomplished by attempting to fit a pessary. From necessity she had acquired some dexterity in the introduction of damp cotton into the vagina to give her some support when she was obliged to be about, but it often proved a source of irritation. I placed her in the knee-and-chest position and introduced a Sims speculum. The instrument, however, proved unnecessary, as the vaginal outlet in this position became sufficiently patulous to allow of the examination of the whole canal without it. I had determined to use the tampon, but before placing it I thoroughly smeared the whole vaginal surface with vaseline. After the parts had regained their normal color, I proceeded to fill, but not to pack, the vagina with dry cotton, the fibers of which I had previously separated as much as possible with my fingers.

In a short time I had to remove it in consequence of the pain produced, and I had the same result a few days later when I attempted to repeat the experiment.

I have long held that the practice of packing the vagina, when dilated in this position, is wrong, for it places the veins on the stretch and straightens out their convolutions, as occurs when the uterus is in the position of prolapse. The uterus is certainly thus placed as much above the "health line" in one case as it is below it in the other. But in this instance I had laid in the cotton so loosely that I had not anticipated the result, although I had filled the canal.

At my next attempt with the patient in the knee-and-chest position, so as to get the ovaries out of the way, I introduced only enough cotton to enable me, with the pressure of my finger over it, to keep them from prolapsing as she turned over to her back. I then proceeded to pack the vagina to a moderate degree. This tampon she retained comfortably for two days with the greatest relief, and from that time to the present she has continued to improve. I daily packed the vagina, and the ovaries gradually became smaller, until at length they no longer presented themselves, and for several weeks they have been beyond the reach of my finger. At the end of two months and a half I discarded the use of the tampon, after having gradually lessened the quantity. I was then able to fit a pessary, which has answered every purpose, and which keeps the uterus moderately anteverted, notwithstanding the small fibroid on the posterior wall. The puffy or air-like condition along the sides of the pelvis has disappeared, and the vagina is not now unusually enlarged. The uterus has decreased in size, the laceration in the cervix is of less depth, and, as there are no reflex symptoms, an operation for its repair will not be necessary. But she can not possibly become a well woman until she has had the operation for restoring the integrity of the pelvic floor. With the pessary she is able to walk a mile and more with comfort. The pessary which I have found applicable for her case is an elastic rubber ring which I procured in London. Its diameter is three or four times that of a similar instrument made in this country, and the increased thickness is a great advantage. The broad surface can not cut into the tissues, and its size is just sufficient to dispose of any slack in the pelvic fascia.

I believe that this case was an extreme one, that the veins were in an unusually enlarged condition, and that the steady pressure excited by the tampon during the two months and a half had obliterated them. And yet I am satisfied that, if she does not have the operation performed, other vessels will become gradually overstretched, and she will relapse into her old condition within a year.

Before closing I will briefly present some practical points as to the material best fitted for the purpose, and give the method of introducing the tampon. Pledgets of cotton saturated with glycerin would naturally be the first material which would be suggested for tamponing the vagina. But in practice I have found that such a tampon is unfitted for the purpose. It would be as difficult to offer a substitute for the use of pure glycerin as for the hot-water vaginal injection in the treatment of pelvic inflammations in the female. Both eventually produce the same result in exciting contraction of the arterial capillaries, while neither exerts any special action on the venous circulation.

The resilient power is lost to the cotton fiber on being macerated in the serous or watery discharge excited by the endosmotic action of the glycerin. Consequently, the cotton packs closely together; it no longer fills the same space, so that the uniform pressure which should be exerted by the tampon is lost, and it eventually excites irritation by its presence.

Sheep's wool has been used, as experience proves it to be better fitted for the purpose. Doubtless it is so in consequence of the protection afforded to each fiber by the oily substances coating it, so that it is essentially impervious to moisture. But I found difficulty in obtaining the wool in the condition I wanted it and within a reasonable price.

In quest of a substitute I began by smearing the vaginal wall with vaseline and then packing the canal with dry cotton. As I introduced the cotton, while the patient was lying upon her back, I soon found that the dry cotton caused a great deal of irritation and annoyance in its passage through the vaginal outlet. At the beginning it was made evident that the absorbent cotton was unfit for the purpose from its ready absorption of all moisture. At length I decided that the best material was the cleanest quality of cotton wool as sold in the shops and put up in rolls. For the tampon I prepared a number of pieces of cotton of about the width and thickness of four fingers. I then made a ball of each by turning the four corners or edges together, and while grasping these I thoroughly smeared the outer surface with vaseline. Each ball was then of about the size of an English walnut and kept its shape as it was packed loosely into a tin box for use. It was found advisable to have these balls of cotton as nearly uniform as possible and of about the size that I have indicated.

On beginning the operation it is sometimes necessary to place the patient on the knees and chest before the uterus can be replaced. Then several balls are to be introduced and placed at a point where the uterus can be held by means of the finger while the patient is turning upon her back. I have already stated my reasons for preferring this position in introducing the tampon. One ball of cotton after another should be placed in the vagina and passed closely along the index finger of the other hand which is engaged in pressing back the perinæum and in holding up the uterus or that portion of the tampon already introduced.

If one part of the vagina is more sensitive than another we must learn to "humor" it by making less direct pressure until tolerance becomes established. When the sensitiveness is situated in the neighborhood of one of the broad ligaments we must pack the cotton on the opposite side of the cervix to act as a crutch. If the inflammation is chiefly about the utero-sacral ligaments, it is easy to tampon so that the uterus will be lifted without making direct pressure. The tampon should be placed so as to make as little direct pressure to the left as possible along the course of the rectum. After the introduction of a sufficient amount of cotton we are to pass the index finger carefully over every portion to be certain that it is uniformly placed and to smooth down the entire surface. When this "finishing off" is properly done it is possible, from the coherency of the cotton and vaseline, to pack but a portion of the vagina. It may be but the upper part, or to one side, and it is likely to remain in position.

There are two practical points in the application which, if not carried out carefully, will cause all our efforts to miscarry. The first is to keep the uterus, throughout the whole course of treatment, as nearly as possible in its natural position and at the same plane in the pelvis. The other is to place the fresh tampon without delay after the other has been removed. I have been in the habit of renewing the tampon daily for the patients in my private hospital. But if it could be kept deodorized, the longer it remained undisturbed the more thoroughly would both of these indications be met in practice.

The best instrument for removing the cotton is a piece of whalebone with a rough screw cut in the end, a simple device for the application of which we are indebted to the late Dr. Sims. This is easily passed alongside of the finger and twisted into one portion after another. It is well to leave that part directly under the uterus until the last, so that the finger may be slipped beneath the cervix, at the proper moment, to hold it in place until the fresh tampon can be introduced. To facilitate this, everything should be prepared beforehand. It is very evident if the uterus is allowed to prolapse, that just in proportion as it does so the circulation must be disturbed, and that if there is any advantage to be gained from maintaining a steady and uniform pressure, it must be, as nearly as possible, a continuous one. Therefore there should be no unnecessary delay in returning the tampon, as the blood begins again to rapidly dilate the vessels as soon as the pressure is removed.

A serious drawback to the satisfactory progress to be gained by this mode of treatment is the recurrence of the menstrual period, when the use of the tampon has to be discontinued. Just before the period is expected I remove the tampon and immediately introduce one of the rubber rings which I have already referred to, and one of a sufficient size to admit of the introduction of the finger between it and the vaginal wall at any point. These rings are about three quarters of an inch in diameter, and so long as the patient remains in the recumbent position their broad surface offers a fair substitute for the tampon both in exerting a direct pressure upon the larger vessels and by taking up the slack in pelvic tissues. As soon as the flow has ceased I have a large hot-water vaginal injection administered and then employ the tampon as before in the continued treatment of the case.

SEPTIC PERITONITIS FOLLOWING LAPAROTOMY.*

By P. F. CHAMBERS, M. D.

The technique of the operation of laparotomy has now become so thoroughly perfected that to all surgeons any attempt at a description of methods would be superfluous. Traumatic peritonitis, the great *bête noire* of a few years ago, is now a thing of the past; but there still remains a danger to which I wish to call your attention—viz., septic peritonitis. Though a firm believer in the use of antiseptic precautions, I do not wish to introduce it as a factor in my paper, knowing that there are many leading laparotomists who deny their efficacy, and a discussion of the question would lead away from my subject. At the same time, believing as I do that one of the chief causes of septic peritonitis is the introduction of septic matter at the time of the operation, I should hold myself culpable did I not resort to every antiseptic precaution possible. The causes of septic peritonitis following laparotomy I would class in the following order:

1. A failure on the part of the operator, either through carelessness or inability, to thoroughly cleanse the abdomen. 2. The introduction of septic material, at the time of operating, by sponges, instruments, or the hands of the operator. 3. Oozing from the stump or from broken adhesions. 4. The detritus entering the abdominal cavity around the pedicle when it has to be treated externally, or from the bursting of mural abscesses into the abdominal cavity.

The first cause—a failure to thoroughly cleanse the abdominal cavity. In most instances where there has been a discharge into the peritoneal cavity at the time of operating, all that will be necessary will be a thorough cleansing with sponges, but it should be so thoroughly done that there should be no discoloration of the last sponge. Of course, in some cases it is almost an impossibility, especially in those where there has been a free discharge of colloid or dermoid material into the abdominal cavity, produced by a premature rupture or tearing of the sac. I have met with several cases where it was impossible to remove the material. It was of a mucilaginous nature, and adhered with great tenacity to the omentum and intestines. I have never yet seen these patients fail to be attacked with septic peritonitis, and but few of them recover. In the more severe cases the method proposed and so ably practiced by Mr. Tait, of washing out the abdominal cavity with warm water, I have seen attended with most beneficial effects. Do not hesitate as to quantity of water. Pour quart after quart into the cavity; do it gently, however, so as to produce as little shock as possible by concussion, and, with the hand in the cavity, move it about gently among the intestines, so that the water will reach every part, and wash away all the material. Then sponge out every particle until the cavity is well dried.

The second cause—the introduction of septic material by the sponges, instruments, hands, etc.—has been so fully and repeatedly discussed in papers on antiseptic surgery that I will not now take it up.

The third—oozing into the cavity after the operation—is due to so many and such varied causes that it is extremely difficult to lay down any rules as to the methods of prevention. Should there be a tendency to a bloody oozing from the pedicle or from broken-up adhesions, the surgeon should, of course, see that it was entirely stopped before closing the abdomen; but, as in many laparotomies there is a serous oozing from the abdominal parietes, there is nothing we can do to check it, but have to turn our attention to the best means of drainage.

The fourth was a much more frequent cause when the method of treating the stump externally was more popular than now. In many cases it is a very difficult matter to prevent the sloughing material burrowing down next to the pedicle, and thereby finding its way into the peritoneal cavity. Now that the stump is, in the majority of operations, dropped back into the abdomen, the accident is much less frequent. Septicæmia resulting from mural abscesses is nothing new to any of us, and I think that many more cases of septic peritonitis than at first supposed could be traced either to a slight opening and gradual oozing, or to a sudden bursting of the abscess into the cavity.

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* Read before the Alumni Association of the Woman's Hospital in the State of New York at its fourth meeting.

The prognosis in all cases of septic peritonitis is extremely bad. In fact, most of the deaths following laparotomies are, I think, due to it. It usually manifests itself within forty-eight or fifty-six hours after the operation, and runs a course of from three to nine days. The first and most unfavorable symptoms are vomiting of a dark, greenish material and beginning tympanites. The pulse increases in rapidity, reaching in fatal cases 140 to 160. The temperature in some cases rises very quickly, but in others it may take two or three days before it reaches 102° F. The vomiting is persistent and the tympanites may become so great as to uncomfortably distend the abdominal wall, and, from pressure upon the heart and lungs, make the breathing quick and painful. After the second or third day the patient will sometimes, though not always, become stupid, and, if she is not soon comatose, a delirium will set in that will last to the end. The stupor is occasionally so profound that it is with difficulty that the patient is aroused, and I have known the abdomen to be opened and reclosed, the patient as unconscious of it all as if profoundly etherized, only waking up after the dressings had been reapplied. I recall with distinctness a patient of Dr. Thomas's in the Woman's Hospital while I was house surgeon:

He had removed the uterus for a large myoma, and for the first few days the patient did remarkably well. On the fourth day she began to show all the signs of septicæmia. The stupor increased from day to day until finally nothing could arouse her. The doctor removed the clamp, cut away all the sloughing material, and, with his finger pushed down and around the pedicle, he broke up all adhesions, and then washed everything thoroughly with an antiseptic solution. To our surprise the patient awoke before we could reapply the dressings, and for two hours was perfectly conscious, when the stupor began to return. The cleansing was repeated and was followed with equally good results. The patient made a good recovery, but for two weeks the dressings had to be reapplied every two to four hours.

The order in which I should be inclined to class the different steps of treatment, according to merit and importance, is as follows: To free the system of the septic material already absorbed. To prevent a reabsorption by getting rid of the source of trouble. Stop the vomiting, and, lastly, use stimulation and nourishment to the fullest extent. Instead of the free administration of opium, as advocated by the late Professor Alonzo Clark and practiced for years in all attacks of peritonitis, the most favorably accepted method now is to expel the septic material by purgatives. A saline cathartic will not only relieve the distended bowels of fæcal matter and gas, but will very frequently check the vomiting when everything else has failed. The pulse decreases in frequency, and the temperature falls two or three degrees, plainly indicating the voidance of the cause of trouble. To prevent the shock of the operation it is often necessary to give ♏ vij of Magendie's solution of morphine, and in some cases it may have to be repeated at long intervals, but in the great majority the smaller the amount of opiates the better. The patient soon gets over the pain of the operation, and, if she has progressed favorably without anodynes and the pain does not return, she is in every way better for not having had them. In most septic patients they not only are not beneficial, but are often very dangerous. I have repeatedly seen only a very few minims of morphine produce profound narcosis from which it was very difficult to arouse the patient, and I have no doubt there have been many deaths from this cause. Should the symptoms indicate the presence of septic material in the abdominal cavity in too great a quantity to be removed by the cathartics, then the abdomen should be reopened and the entire cavity washed out as previously described. In this connection I should like to report a case which came under my care in Dr. Thomas's service at the Woman's Hospital:

Miss X., aged thirty years, was admitted into the Woman's Hospital, giving a history of severe and exhausting uterine hæmorrhage. On examination, a fibroid tumor, intra-mural, of the size of a child's head, was found filling the pelvis. From the previous history it was deemed advisable by Dr. Thomas to perform Hegar's operation, which he proceeded to do at once. The operation was performed in the usual way, both ovaries and tubes were removed without the slightest trouble, and the abdominal wall was closed with silver-wire and catgut sutures. There was no discharge into the abdominal cavity, and, so far as we could judge, all antiseptic precautions had been practiced. The patient did well up to the third day, when she began to have symptoms of septic peritonitis. The pulse and temperature rose rapidly, and the vomiting became so incessant that it was out of the question to administer either food or medicine by the mouth. By the evening of the fourth day the pulse had reached 160 and the temperature 103°. I decided, in Dr. Thomas's absence, but with his approval, to open the abdomen. She was too weak to take ether, so I preferred to give chloroform, a few whiffs of which produced complete anæsthesia. Very little dark serous fluid was found down in Douglas's *cul-de-sac*, and the peritonæum was in an acute state of inflammation. There seemed but little hope of saving the patient, yet, nevertheless, I determined to test the virtues of hot water. The entire abdominal cavity was washed out, and then thoroughly dried with the softest sponges obtainable, manipulating them with great care. The abdomen was then closed, leaving in, however, a glass drainage-tube. The vomiting did not return; the pulse and temperature, before morning, had dropped to about normal, and from then on the patient made a steady recovery. The drainage-tube was allowed to remain in position for five days, until all discharge had ceased.

Should the sepsis be due to the sloughing material of the stump, then the result will depend very much on the ability of the surgeon or nurse to practice thorough cleanliness. All the sloughing material should be removed by the knife or scissors, and all pockets in and around the stump freely opened, and kept thoroughly washed out with antiseptics or freshly boiled water. The mural abscesses should, of course, be looked after, and just as soon as the phlegmon has broken down into pus it should be well opened, cleansed, and carefully attended to.

The vomiting and tympanites are troublesome symptoms, and often baffle all treatment. Should the cathartics fail I should be inclined to give the stomach perfect rest—that is, to give absolutely nothing by the mouth. If, however, the patients crave drink, as they often do, then hot water in teaspoonful doses is probably the best. Aromatic spirit of ammonia, oxalate of cerium, creasote, black coffee, etc., all have their merits, and in a few instances seem to be of service, but are really of little benefit so long as the septic material is in the system. For the tympanites many European authorities are now advocating tapping the colon with a small trocar and cannula. As to its advantages I am unable to speak from personal experience. I have only tried it in one case, and seen it tried by Dr. Thomas in another. The tympanites did disappear, but, as neither patient recovered, it is somewhat doubtful whether the tapping was really of any benefit. I should, however, be inclined to try it again should I be so unfortunate as to have another similar case.

In all cases stimulants and nourishment should be given as much as possible by the mouth and rectum if the patient can stand it, or by either method if not by both. To reduce fever, if the patient is strong enough—that is, if there is no danger of failing heart action—give antipyrine in gr. x or gr. xv doses, and apply the ice-cap and coil. The cathartic preferable is either a saline aperient alone or calomel followed by a saline. The best method of drainage—when drainage is deemed necessary—is that with the glass drainage-tube.

DR. DETTWEILER'S METHOD OF TREATING PULMONARY CONSUMPTION:

*An Appeal for the Establishment of an Institution for the Rational Treatment of Pulmonary Consumption.**

By PAUL H. KRETZSCHMAR, M. D.,
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Explanations and excuses are frequently offered by recent writers on the question of treating pulmonary consumption for doing so; some one has even gone so far as to make the remark, "If a professional man has nothing else to do he writes a paper on phthisis." I believe, on the other hand, that there exists in the whole subject of medical science no more important question to-day than that relating to the best possible means of diminishing the dreadful death-rate from pulmonary consumption. Not only to the members of our profession, but to the humanitarian, to the philanthropist, and to everybody taking interest in the welfare of society at large, the subject of successfully treating consumption is an important and entirely practical one. The statement can be made, without fear of contradiction, that more people die within the limits of the United States from consumption than from all the epidemics of contagious disease put together, and that no active measures are inaugurated to bring about a change for the better.

It is true that wealthy persons unfortunate enough to suffer from pulmonary consumption may derive much benefit from a long-continued residence in the well-known health resorts in Colorado, in New Mexico, or in Switzerland; they may be cured by submitting to proper treatment in the world-renowned institution for the cure of pulmonary consumption of Dr. Hermann Brehmer in Goerbersdorf in Germany, or at Dettweiler's sanitarium at Falkenstein, or they may prolong life by exchanging our cold and variable winter climate for that of Florida, Georgia, or North Carolina; but what are our poor patients to do? Having no means to employ either of these useful and frequently successful agencies to battle with the powerful enemy, they seek relief in the dispensaries and hospitals of our large cities, and after a shorter or longer period of suffering, and after having swallowed a large quantity of cough mixtures, more or less morphine, and probably a variety of quack medicines, they die. This statement sounds harsh, and it is not a pleasant one to make before a learned medical audience, but nevertheless it is the naked truth. I admire the honesty and frankness of our colleague, Dr. A. Seibert, who says, in a paper read before the Society of Physicians of the German Dispensary on November 12, 1886: "The poor patients suffering from chronic pulmonary disease—perhaps excepting old cases of emphysema—all die, and most of them without even gaining as much as temporary arrest in the destructive work of the disease. This at least is my experience after practicing for a number of years among the poor Germans of this city." If any one doubts the truth of what has been said, let him watch the routine mode of treating dispensary patients presenting the early symptoms of pulmonary consumption, or let him make inquiries as to the prophylactic measures employed by the average physician to prevent the development of the disease; let him visit our general hospitals and convince himself that the poor sufferers do not receive any kind of rational treatment. The so-called hospitals for consumptives are not hospitals at all in the good sense of the word; they are simply homes where patients find a place with comparative comfort—to die.

Can we present to the members of the profession and to our wealthy and benevolent citizens such facts as will induce them to establish institutions for the cure of consumption where the sufferers from chronic pulmonary disease may reasonably expect to derive benefit from treatment?

The cardinal question to be discussed is the one relating to the curability of pulmonary consumption, and the next one is, by which method, applicable to our large cities, can we obtain the best possible results.

In regard to the curability of pulmonary phthisis, most observers are firmly of the opinion that pulmonary phthisis in rare instances terminates favorably without regard to treatment; that under appropriate management and treatment the disease should be regarded as curable. Most observers are also of the opinion that tuberculosis and pulmonary consumption are identical, although well authenticated cases are on record where bacilli could not be detected in the expectoration of patients presenting all the symptoms and signs of pulmonary consumption. Without discussing this highly interesting and very important question, the fact seems to have been proved that bacilli which were present at one stage of the disease disappeared later on. Demme[*] reports a case of a child eight years of age and of previously good health which developed bronchopneumonia and consolidation of the left lower lobe after a severe attack of measles; she suffered from cough, loss of flesh, and hectic fever. At first no bacilli could be found; later on, however, when the expectoration became thick and yellow, three or four tubercular bacilli appeared in each field. During a period of two months the bacilli could be detected, but as the general health of the patient improved and the consolidation became absorbed they disappeared. Soon afterward the same child developed acute rheumatism and endocarditis and died. The autopsy revealed, aside from the pathological conditions due to endocarditis, a few cheesy deposits in the lungs; very few and only degenerated or dying bacilli could be detected. Two bronchial glands of the size of hazel-nuts in the stage of cheesy degeneration were subjected to a most careful search, but in a large number of preparations only *two* dying bacilli could be found. Nauwerk[†] reports a similar case. I am indebted to Dr. H. Brehmer, who has during a period of thirty-two years treated over 13,000 phthisical patients, for the following statement: "Until recently I discharged patients as cured if all the symptoms of pulmonary consumption had disappeared and if the physical signs showed nothing else but the result of previous disease; now I do not give a clean bill of health to any of my patients except they present the requirements of former days and their sputa have remained entirely free from bacilli for at least five consecutive weeks." Dr. Brehmer also informed me that during 1885 out of 488 phthisical patients treated in his sanitarium there were seven who were and remained free from bacilli, and that in the following year out of 521 patients seven again—though some of these had suffered from hæmoptysis, and all had elastic fibers in their sputa—remained free from bacilli. In 1885, 77 patients belonged to the first stage, 4 without bacilli, and of the remaining 73, 14, or 19 per cent., were discharged cured; 258 patients belonged to the second stage, presenting diagnosticable cavities; 3 of them never expectorated bacilli; of the remaining 255, 16, or 6·3 per cent., were discharged free from bacilli and cured; of 328 patients suffering from tuberculosis in its first and second stages, 30, or 9·1 per cent., were cured; the remaining 159 belonged to the third stage. In 1886 the total number of patients amounted to 521, 7 of them without bacilli; 58 of these belonged to the first, 298 to the second, and 165 to the third stage; of 356 patients available for treatment, 46, or 13 per cent., were discharged cured. Dr. P. Dettweiler, of Falkenstein, has published a pamphlet[‡] relating to the permanent cure of seventy-two cases of pulmonary consumption, from which I now quote: "We have treated in Falkenstein 1,022 cases of consumption, the diagnosis depending on the physical signs and the general condition of the patients, together with the presence in the sputa of elastic fibers, and more recently of tubercular bacilli. Of these we have discharged as entirely cured 132, as relatively cured 110. In regard to the latter class, I wish to state that it includes cases where the general health of the patient and the condition of the heart and lungs would indicate a perfect recovery, if it were not for some one or another of the symptoms of chronic pulmonary disease remaining. Of the 132 classified as permanently cured, I addressed inquiries to 99, whose residences and addresses I knew, and who had been discharged as cured at least three years ago. Some of them had undergone treatment almost ten years previously. I received 98 answers, which showed that 11 had died, some from consumption, some from other causes; accepting 25 per mille as the annual average death-rate, this number is not a large one, covering as it does a period of from three to nine years; 12 had had relapses, but were enjoying comparatively good health at present; 3 were at present suffering from pulmonary disease; and the remaining 72 had continued to enjoy good health—3 for nine years and over, 12 for eight years and over, 4 for seven years and over, 7 for six years and over, 14 for five years and over, 15 for four years and over, and 17 for three years or more. In all cases a short note from the family physician accompanied the patient's statement." Dr. Dettweiler, who himself has been suffering from pulmonary phthisis and had at one time been an inmate of Dr. Brehmer's sanitarium as a patient, and was afterward one of his assistants, closes his report with these words: "If it is of interest or of value to hear the testimony of a physician who has lived for over fifteen years among phthisical patients, and who has suffered himself from the disease for even a longer period, but who is now so far cured that even with the most careful examinations bacilli can not be found, I formulate my opinion as follows: *Under appropriate treatment, if the disease has not made too much progress and if the treatment is continued a sufficient length of time, more than one half of all cases of bacillary phthisis should be cured, and they will remain so if the patient will live accordingly afterward.*"

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* Read before the Section in Materia Medica and Therapeutics of the New York Academy of Medicine, January 27, 1888.

Dr. Meissen, in an able article published in the "Deutsche Medizinal-Zeitung," No. 59, 1885, entitled "Contribution to our Knowledge of Human Phthisis," speaking of the results obtained in 731 cases treated in Dettweiler's sanitarium at Falkenstein, gives the following statistical report: "The 731 cases were taken without selection from the records of the institution. They comprise 105 cases of initial pulmonary phthisis, 442 cases of active pulmonary phthisis, 125 cases of progressive pulmonary phthisis, 6 cases of florid pulmonary phthisis, 52 cases of stationary pulmonary phthisis, and of these, 483 patients were benefited by treatment and 248 either died or did not improve. As we can hope for successful treatment in initial, active, and stationary cases only, the others—florid and progressive phthisis—ought to be excluded from the list, and it would then appear that, of 600 patients with pulmonary phthisis, 483 were improved and 117 were not benefited by treatment, and, while of all the patients 66 per cent. improved and 33 per cent. did not, of those available for treatment 81·5 per cent. improved and 18·5 per cent. did not." Dr. Meissen says further: "I have classified the result of treatment simply as 'improved' and 'not improved,' for I believe that in a very few cases we can, after three months' treatment, speak of a positive cure. By 'improved' I mean not only a temporary disappearance of one or more of the unpleasant symptoms of the disease, or a slight improvement in the physical signs, but a decided and lasting gain in every particular, more especially an increase in the weight and in the strength of the patient, a stronger heart's action, and an increased capacity of the lungs, such as a careful and painstaking physician can observe during the duration of treatment. In the cases reported the average duration of treatment was ninety days; but I should expect still better results if the patients would remain longer, although even then each case must be judged for itself. As an evidence that early treatment is of vital importance, it may be here stated that of 105 patients with initial phthisis 104 improved, of 53 with stationary phthisis *all* improved, and of 442 with active phthisis 334 improved and 108 did not."

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[*] "Berliner klinische Wochenschrift," 1883, p. 217.

[†] *Ibid.*, p. 283.

[‡] Frankfurt am Main, 1886. Johannes Alt.

These clinical facts, observed by the most trustworthy and experienced phthiso-therapeutists, are in perfect accord with scientific researches, as shown by the experiments made by Dr. E. L. Trudeau, of Saranac Lake, and described in a paper entitled "Environment in its Relation to the Progress of Bacterial Invasion in Tuberculosis." * Dr. Trudeau's experiments are of such importance and show so plainly the true mode of fighting successfully the powerful enemy that I can not refrain from speaking of them at some length. The doctor, who is known as a careful and enthusiastic worker, tried to find some satisfactory answers to these three questions:

1. What result ensues when both bacillary infection and unhygienic surroundings are made to co-exist in tuberculosis?

2. Are unhygienic surroundings, when every known precaution has been taken to exclude the bacillus, sufficient of themselves to bring about the disease?

3. Is bacillary invasion invariably progressive in animals placed under the best conditions of environment attainable?

Experiments.—Fifteen rabbits were made use of, and divided in three lots, each set of animals being placed under conditions best adapted to answer, in the results noted, the three questions referred to above.

Experiment No. 1.—Five rabbits were inoculated in the right lung and in the left side of the neck with five minims of sterilized water in which was suspended a sufficient quantity of a pure culture (third generation) of the tubercle bacillus to render the liquid quite perceptibly turbid. The needle of the Koch's inoculating syringe was inserted subcutaneously on the left side of the neck and in the third intercostal space to a depth of thirty millimetres on the right side. These animals were then confined in a small box and put in a dark cellar. They were thus deprived of light, fresh air, and exercise, and were also stinted in the quantity of food given them while being themselves artificially infected with the tubercle bacillus.

Experiment No. 2.—Five healthy rabbits were placed under the following conditions: A fresh hole about ten feet deep was dug in the middle of a field, and the animals, having been confined in a small box with high sides but no top, were lowered to the bottom of this pit, the mouth of which was then covered with boards and fresh earth. Through this covering a small trapdoor was cut, which was only opened long enough each day to allow of the food, consisting of a small potato to each rabbit, being thrown to the animals. So damp was the ground at the bottom of this pit that the box in which the rabbits were confined was constantly wet. Thus these animals were deprived of light, fresh air, and exercise, furnished with but a scanty supply of food while breathing a chill and damp atmosphere, though free from disease themselves and removed as far as possible from any accidental source of bacterial infection.

Experiment No. 3.—Five rabbits, having been inoculated in precisely the same manner as the animals in the first experiment, were at once turned loose on a small island in June, 1886. It would be difficult to imagine conditions better suited to stimulate the vitality of these animals to the highest point than were here provided. They lived all the time in the sunshine and fresh air, and soon acquired the habit of constant motion so common in wild animals. The grass and green shrubs on the island afforded all the fresh food necessary, and, in addition, they were daily provided with an abundant supply of vegetables. Thus, while artificially infected themselves, they were placed in the midst of conditions well adapted to stimulate their vital powers to the highest point attainable.

RESULTS.—*Experiment No. 1.*—Four of the inoculated rabbits confined in the cellar died within three months; in all of them the injected lung was extensively diseased, the other lung and the bronchial glands being also more or less involved, and tubercles in various stages, but sufficiently advanced to be macroscopical, were found in the pleura, peritonæum, spleen, and liver; from these lesions pure cultures of tubercle bacilli were obtained. The fifth rabbit survived, and was killed four months after injection. At the autopsy the right lung was found solidified and shriveled, the upper portion being almost entirely destroyed, while a bronchial gland as large as a hazel-nut, filled with creamy pus, occupied the right chest; tubercles, which in many places had become cheesy, studded the upper portion of the left lung. The other organs were healthy.

Experiment No. 2.—The five uninoculated and healthy rabbits placed in the damp pit were all living at the end of four months. They were emaciated, and their coats were rough, but they still seemed about as active as at the beginning of the experiment. They were all killed within a few days of each other; but a careful examination of their organs revealed nothing abnormal in any of them.

Experiment No. 3.—One of the five rabbits which were allowed to run at large died just one month after inoculation. The lower portion of the lung was solidified, the bronchial glands enlarged, as well as the axillary glands on the left side, and a few tubercles were made out in the spleen. The left lung and all the other organs were sound. The four other rabbits remained apparently in perfect health, and so active had they become that two of them could only be captured by the aid of a gun. All four animals were killed at the beginning of November, or four months after inoculation. They were loaded with adipose tissue, and their flesh was so firm and red as to be in striking contrast to the blanched and flabby muscles of the other rabbits previously examined. All the organs were healthy, and even the points of inoculation could not be made out.

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* Read before the American Climatological Society, Baltimore, June, 1887.

Instructive as it would be, it would lead us away too far from the purposes of this paper to dwell at length upon the lessons which these experiments teach us; suffice it to call attention to the fact that the large majority of those animals—lot 3—which were placed under the best possible hygienic conditions did not develop tuberculosis, although infected in precisely the same manner as those of lot 1, all of which became victims of tubercular infection.

If clinical experience and scientific investigation alike teach us that pulmonary consumption as well as artificially produced tuberculosis may readily terminate in recovery, and if we admit the truth of the statement made in the first part of this paper, that almost all of our poor patients do not recover, we must come to the conclusion that the mode of treatment practiced by us is not the proper one. It is the writer's opinion that the results which have been obtained by Dr. P. Dettweiler in the sanitarium at Falkenstein, in the Taunus hills near Frankfort, in Germany, are such that his method of treating phthisical patients should be made known to the profession in this country, and that an effort should be made without delay to establish a similar institution for the treatment of patients with limited means within easy reach of New York city. Although Dettweiler's mode of treating consumption does not reject the use of drugs altogether, its principal aim is to increase the vitality and the resisting power of the cells of the body, so as to enable them to effectually combat the bacterial invasion, by placing the patients under the closest personal supervision, and by the strictest individualization of each case. The strong points in Dettweiler's method of treating consumptives are: the most liberal and, we might say, specific use of pure mountain air—specific in the sense that the patients are either lying or walking in the open air almost day and night, as will be described farther on; the administration of a rich, liberal, and peculiarly adapted mode of diet; the very free use of milk; the general, but well controlled, use of wine and cognac, with or without milk; and the adoption of such climatic, balneological or therapeutical agents—including the use of compressed or dilated air, massage, and the douche—as each case for itself may indicate.

The sanitarium in Falkenstein was founded in 1874 by a stock company—the shareholders not to receive more than five per cent. dividend on their investment, the surplus income to be used for the improvement of the institution, and, later on, for the establishment of similar places for the treatment of the poorer classes—and has been a success ever since, both financially and as regards its reputation among the medical profession. It is situated on the southern slope of the Taunus mountains, about fourteen hundred feet above the sea-level, near the city of Cronberg, about two hours' ride by rail and stage from Frankfort. It consists at present of three large buildings, together with such necessary annexes as gas-works, cow-stables, laundry, etc. The largest of the three buildings presents the form of a horseshoe, to protect the inhabitants from the rather heavy north winds which prevail there occasionally, and contains eighty rooms with over one hundred beds, and the post and telegraph offices, parlors, reading-rooms, billiard-room, offices, examination-room, and the douche in the basement. The next building, connected with the others by an arcade, contains the large, high, and well-ventilated dining-room, which seats about two hundred people comfortably, the kitchen being outside of the building. The third building contains the residences of the medical superintendent and his associates. Many improvements have been made during the year just closed. The climate of Falkenstein is not alleged to have any specific influence on the diseased organ; it does not differ in any essential part from that of southern Germany in general, except that during July and August the temperature is quite high. The air is comparatively free from dust or other impurities, although I believe that it would not be difficult to find localities within easy reach of New York city with still purer air; well-cultivated pine and oak forests are in the immediate neighborhood, with numerous attractive walks scattered through them, and with plenty of seats and places for rest. A number of rotating pavilions are erected at different parts of the grounds, and a large arcade extends along the entire front of the principal building; the view from the latter, or from any part of the front of the house, is really beautiful.

One of the points which Dettweiler considers as of greatest importance in obtaining favorable results *is the treatment of phthisical patients within institutions* where they are constantly under the personal supervision of the attending physician. The medical profession of Germany seems to approve of this view, and everybody must admit the good showing which these institutions make as compared with the usual results obtained elsewhere. A number of larger and smaller establishments for the rational treatment of pulmonary consumption exist in different parts of Germany; in Goerbersdorf, where the cradle of them stands to-day as the model sanitarium of Dr. H. Brehmers, two others have been established; even Falkenstein has a second one. Dr. Driver, of Reiboltsgrün, in Saxony, and Dr. Jacubasch, of Andreasberg, in the Harz Mountains, are proclaiming good results in their respective places. *Why should we not try the system in this country?* The smallest details of the patient's life are controlled by the supervising physician, and nothing of any importance is left to his or her judgment. The daily exercise in the open air, the use of lung-gymnastics, the administration of stimulants, even the changing of garments, are matters not left to the judgment of the patients. Dettweiler says the physician who wishes to manage successfully such an institution must himself be a good man, the possessor of a big heart and much patience, and he must be supplied with all the instincts of a "shepherd's dog." The relation of teacher and pupil, in the fullest and best sense of the word, must exist between the physician and his patients, and, without entering into the field of popular medical lectures, the patients should be taught to understand the physiological and hygienic laws which it is so essential for them to follow if they desire to come out victorious in the battle with the bacillus tuberculosis. The physician's office should be the patient's confessional chamber, and every possible effort should be made to foster implicit confidence in, and strict obedience to, the physician among the patients.

In connection with other phthiseo-therapeutics, Dettweiler praises the invigorating influence of pure mountain air, and its great value as a powerful agent in the treatment of consumption, but, contrary to the general usage, he does not allow his patients to use it at first without positive instructions from the attending physician. He maintains that the patient who has been in many instances confined to his room for weeks previous to his journey to the sanitarium, anticipating wonderful effects from pure air, indulges in an excessive use of it. Considered as a chemical compound, pure air can not injure anybody, but its physical properties may be such that harm may follow its indiscreet use in certain cases. New patients are not permitted to walk outside of the immediate vicinity, or even remain outdoors for a long time, until after the first careful examination, which is generally made by two physicians the day after arrival; the limit of outdoor exercise is then agreed upon, also the hours of rest in the open air, and the first instruction in lung-gymnastics is given. Under ordinary conditions, the duration of outdoor living is increased daily and the greatest importance is placed in "resting" in the open air. Over ninety *chaises-longues*—lounges made up of rattan and upholstered with horse-hair—are placed over the verandas, the arcade, and the rotating pavilions, and the patients, after being acclimated, spend many hours daily—dressed properly, and covered with blankets in accordance with the season—lying upon them. It is this "permanent air-treatment" to which I referred as "specific" in its nature, for I have never observed this kind of treatment anywhere else. We can easily understand how this method may be successfully carried out during the warm season of the year; but even during the coldest period of the winter, while snow and ice cover the surrounding ground, all the patients—excepting only those with the severest cases and those suffering from intercurrent diseases—are subjected to this permanent air-treatment. During the winter before last, which was an exceptionally cold one, a daily record was kept, and it was found that some of the convalescing and more energetic patients extended the so-called "*jour médical*" to ten and eleven hours, about 6 per cent. belonging to this class, while 8 per cent. rested in the manner described over nine hours, 8 per cent. over eight hours, 18 per cent. over seven hours, 18 per cent. over six hours, 12 per cent. over five hours, and most of the remaining spent at least two or three hours on their rattan lounges. For the purpose of showing the influence of the weather on the number of patients partaking of the permanent air-treatment, Dr. Dettweiler and his associate kept an exact record during the year 1885 of the proportion of patients which were compelled to remain indoors all day and were visited by the attending physician at their rooms. The record reads: January, 10 per cent.; February, 7½ per cent.; March, 9½ per cent.; April, 9⅛ per cent.; May, 9½ per cent.; June, 7⅕ per cent.; July, 7½ per cent.; August, 6¼ per cent.; September, 7¼ per cent.; October, 9⅔ per cent.; November, 10¼ per cent.; December, 10½ per cent.—an average of 8½ per cent. during the summer months, and 9½ per cent. during the balance of the year. Considering the fact that those remaining through the winter belong to the more serious class of patients, the difference is very small. Only in exceptional cases—in highly anæmic subjects, and those suffering from continuous and decided fever with frequent chills—is the permanent air-treatment not indicated. Those suffering from chills during the early hours of the day do not occupy the lounges until after dinner. Six hours is the average time spent on the lounge; many remain there until ten o'clock at night, passing the time reading or writing, playing dominoes or chess, the verandas and pavilions being well lighted after dark. Card-playing and games of chance are prohibited. Dettweiler maintains that experience, extending over a period of more than ten years and over a large amount of material, has convinced him that immunity against the unfavorable influences of sudden changes of temperature, diminished cough, increased appetite, and lessened fever are results obtained by the permanent air-treatment. Dettweiler being a careful observer and a man in whose judgment those who know him place confidence, the question naturally presents itself, Why should we not profit by his experience and introduce this very simple and still so effective mode of treatment in a properly situated sanitarium near New York city? Another feature of the treatment as used in Falkenstein—although not original with Dettweiler — supposed to strengthen the system and to harden it against unfavorable external influences—is the systematic use of massage and the regular daily rubbing down of patients, early in the morning and before rising, by trained nurses, first by means of dry towels, afterward with alcohol, and occasionally with salt-water. The cold douche—given at first only for fifteen and never over fifty seconds, generally applied sideways, at first as a rain-shower and afterward as a stream, always administered by a physician—is added in most cases to the other invigorating measures.

As one might expect, much attention is paid to the patient's diet and to the condition of the alimentary canal. Dettweiler considers anorexia, next to pyrexia, the most important factor in destroying the life of our phthisical patients. As in other respects, so in regard to nutrition, much attention should be paid to the individual needs of each case, and, if necessary, all the delicacies of the season should be laid before the patient to tempt the appetite; it is certainly necessary to cater to the peculiarities of some in order to overcome their dislike for food. With these exceptions the patients take all their meals together, one physician being always with them, and the time for meals is thus arranged: First breakfast, consisting of coffee, tea, chocolate, or milk, with cakes or rolls and butter or honey, from 7 to 8.30 A. M. Second breakfast, bread and butter with milk, always as much as desired, or bouillon and cold meat, at 10 o'clock A. M. Dinner, the principal meal, consisting of soup, fish, or boiled meat, roast, with a variety of vegetables, salad and compote, and dessert, at 1 P. M. With the dinner each patient drinks from one third to half a bottle of Rhine or Hungarian wine; immediately after, but not taken in the same room, a cup of coffee, either white or black, is served. At 4 o'clock P. M. those whose condition requires additional nutrition partake of fresh milk, and a nice little room is arranged for this purpose within the cow-stable. A warm supper, consisting of soup, warm and cold dishes of meat, with compote, is served at 7 P. M.; some patients are permitted to drink beer with this meal, but most of them take a glass of wine. Instructions are given to eat slowly and chew well; milk especially must be taken only a swallow or so at the time; sometimes it is even directed to be drank from the tablespoon. The food is well prepared and cooked rather rich, and the changes are not confined solely to the bill of fare, but the manner of cooking is also changed often. Dr. Dettweiler himself directs the management of the kitchen. He says that few of the patients do not enjoy the meals at Falkenstein; 86 per cent. of all patients gain an average of nine pounds each during a period of less than three months, while only 14 per cent. do not increase in weight. Dettweiler compares his "permanent air and rest treatment" with the administration of such a liberal and rich diet, amounting almost to overfeeding, to "Weir Mitchell's cure," and he speaks very highly of the favorable results obtained through the latter.

The free use of alcohol, more especially of pure brandy, is one of the features of Dettweiler's treatment which has frequently been criticised, but Dettweiler himself is very decided in his opinion about the value of alcohol as a remedial agent in cases of pulmonary phthisis; he says that he would give one half of the entire materia medica for this one remedy, and that the proper use of alcohol is of the greatest value not only in all cases of phthisis—whether accompanied by consuming fever or combined simply with well-defined anæmia—but also in all diseases where the general system is deranged, or where the functional activity of any of the more important organs is much below the physiological requirements. With this conviction well settled in his mind, he prescribes alcohol in every case in strict accordance with its requirements, never as a matter of routine—always with good results. The phthisical patient with a fair appetite and free from fever does not require more than three fourths to one bottle of good Rhine wine, claret, or Hungarian wine, either white or red, daily, to be taken with the meals. If, however, anæmia is a prominent feature, if the skin is cool, if slight chills are of frequent occurrence, or if the subnormal temperature of the morning extends toward the forenoon hours, he orders what might be called "the brandy treatment," the good effect of which he recognizes more every day. Under such circumstances he orders two teaspoonfuls of pure brandy to be taken every hour or two from morning till night, amounting to about eighty grammes during the day, and to be followed by a glass of brandy milk-punch before retiring. If for any reason alcohol should be administered in another form, the patients carry a flask of strong Rhine or Hungarian wine with them and partake of it in somewhat larger quantities, as is done with brandy. The regular use of brandy or wine through the day is continued generally for a few weeks only, but he advises the moderate use of stimulants during the further course of the treatment after longer walks, in cool weather, or if the patient feels easily fatigued; and he has never yet seen any of his patients acquire intemperate habits from following his advice. Dettweiler makes the following strong statement: "I should least be willing to abandon the use of alcohol in fever, the most powerful enemy of the phthisical patient. After numerous trials and experiments with a large variety of remedies, I will say freely that I would rather dispense with the use of salicyl, quinine, or antipyrine, than with good wine or brandy."

It is hardly necessary to state that the laws of hygiene are carried out strictly at Falkenstein, that the patients sleep with their windows open during the night, that pure water is at hand, that the greatest cleanliness prevails, that cuspidors filled with a solution of bichloride of mercury are placed everywhere, that the patients are instructed to make use of them instead of expectorating all over the place, that the drainage is of the best, etc. The average attendance during the last years has been 160 in the summer and 120 in the winter. The expenses, including wine, brandy, milk, douche, bath, and medical attendance, amount to not over twelve marks, or three dollars a day. The place is generally overfilled, and a number of patients sleep in houses outside of the institution proper, but all of them are subject to the same strict supervision of the attending physician which is exercised over those living within the walls of the sanitarium.

In conclusion, I wish to say that within the limits of this paper it would have been impossible to describe the mode of treating so complex a disease as pulmonary consumption is in its details; that it was rather the intention of the writer to call the attention of the profession to a mode of treatment which seems entirely rational, and which has given such general satisfaction. Criticism has been intentionally avoided, although room for improvement might be easily detected. Let us profit by the experience of others, let us avoid their mistakes, but let us urge not only the advisability but the necessity for establishing an institution for the rational treatment of pulmonary consumption within easy access of New York city.

NEURASTHENIA AND LITHÆMIA:
THEIR DIFFERENTIAL DIAGNOSIS.*

By A. D. ROCKWELL, M. D.,
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NEURASTHENIA is now almost a household word, and, equally with the term malaria, affords to the profession a convenient refuge when perplexed at the recital of a multitude of symptoms seemingly without logical connection or adequate cause. The diagnosis of neurasthenia, moreover, is often as satisfactory to the patient as it is easy to the physician, and by no means helps to reduce the number who have been duly certified to as neurasthenic, and who ever after, with an air too conscious to be concealed, allude to themselves as the victims of nervous exhaustion. The doctrine to be taught and strongly enforced is that many of these patients are not neurasthenic, and under hardly any conceivable circumstance could they become neurasthenic. They do not belong to the type out of which neurasthenia is born, either mentally or physically.

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* Read before the New York Neurological Society, February 7, 1888.

Many of them are unintellectual, phlegmatic, and intolerably indolent, and are pleased at a diagnosis which touches the nerves rather than the stomach, bowels, and liver. Instead, therefore, of rest, quiet, and soothing draughts, they need mental and physical activity, less rather than more food, depletion rather than repletion.

These patients are lithæmic and not neurasthenic. The nervous system is strong enough, and would give no trouble were it not poisoned by the abnormal products of digestion that enter the blood and circulate freely through every tissue of the body. Now, while protesting against the too indiscriminate diagnosis of neurasthenia, I would by no means have it understood that I am not a firm believer in the propriety of classifying under this head that great family of symptoms which the late Dr. Beard was the first to distinctly formulate and label.

My aim, on the contrary, will be to more firmly establish the reality of neurasthenia, and at the same time to elucidate the points of differential diagnosis between this disease and that functional disturbance of the liver that we term lithæmia. The subject has long seemed to me to be of the utmost importance. Only lately a patient consulted me, complaining of neurasthenia, for which she had been treated for a long time without benefit. Now, neurasthenia is a disease by no means incurable, and the fact that no benefit had been derived led me to doubt the diagnosis. True enough, a more careful examination revealed evidences of intestinal and liver indigestion, and an abundance of uric acid in the urine. For years she had taken but little exercise, and indulged her appetite without restraint. Under a complete reversal of this order of affairs—more exercise in the open air, simpler diet, and simple remedies directed toward correcting the disordered digestive function—many of her most persistent and annoying symptoms have quite disappeared. Every general practitioner, I doubt not, could duplicate many times such cases as this; and yet, on the contrary, how often has the neurologist been called upon to deal with just the reversal of this state of things, where a typical neurasthenic has been regarded as simply hypochrondriacal, or treated by alteratives and purges for a supposed torpidity of the liver. The fact that both lithæmia and neurasthenia are so frequent, that there is such an apparent similarity of symptoms, and, above all, that they demand measures of treatment so radically diverse, is, to my mind, sufficient reason for bringing the subject prominently forward for discussion.

As a practical illustration, therefore, of this statement of fact, I will give two cases, each of them typical of the class to which it belongs, and both of them illustrating most effectively the necessity of a correct diagnosis as a guide to proper methods of treatment.

Case of Neurasthenia.—Mr. O., aged thirty-six, consulted me for symptoms that had for the past five or six years greatly interfered with his happiness and capacity for work. Physically he was well developed, standing five feet ten inches in his stockings, and weighing 170 pounds. His complexion was fair, his eyes were blue, his hair was blonde, and his nutrition was apparently unimpaired.

Intellectually he was far above the average. He could speak correctly in two languages other than his own, besides understanding and writing a third, and all this he had mostly acquired through self-instruction. In addition to the labor necessitated by these scholastic acquirements, he had devoted himself for years, with few intervals of rest, to the details of an exacting mercantile business. The symptoms to be described were essentially the same as those he had suffered from for the past five years.

He complained first, and perhaps most of all, of a settled melancholia, associated with a morbid and utterly baseless fear of financial ruin, and yet he was by no means ill-tempered or irritable. On the contrary, he was in his most depressed moods a model of dignity and gentle demeanor. His pulse was 80 or more and somewhat irregular, rendering him fearful of heart disease; but this was only one of a number of morbid fears that had from time to time distressed him. His appetite was fair at all times, and his weight varied but little from year to year. Constipation was a somewhat troublesome symptom.

He looked strong, and yet he was as easily exhausted physically as mentally. He possessed no reserve force, and gave out utterly whenever he attempted to overstep the bounds of the most ordinary effort. At one time his eyes would be bloodshot, and at another perfectly natural, showing a tendency to local and transient hyperæmia, due principally to innervation.

Misled, perhaps, by the constipation from which he suffered, the medication to which he had been subjected had been directed in good measure toward correcting the function of food assimilation, but with no marked effect. To this time he had not given up the general supervision of his business, but soon after coming under my observation he was induced to leave New York indefinitely. He journeyed to the West, visited the Yellowstone region, and at San Francisco took steamer for China. He was absent some eighteen months, and returned a well man, nor has he since relapsed into his former condition.

This case I regard as one of neurasthenia pure and simple. The patient needed no remedy directed to the liver, to the bowels, or to any special function. If he had been unable to pursue the course he did, remedies directed to the restoration of the impoverished nerve-force would have been in order, and not cholagogue cathartics or bitter tonics. What he needed above all things was absolute rest for the exhausted nerve-forces, and an entire change of air and scene. As we can have an acute catarrh which soon wears off, leaving no appreciable ill effect, so we can have an acute neurasthenia, which also passes away, leaving the system strong and well; but, as a succession of acute catarrhs may finally develop into a chronic catarrh which is practically incurable, so many attacks of acute neurasthenia may finally develop into chronic and permanent neurasthenia. The exhaustion that results from any excessive strain upon the mental and physical powers is simply an attack of acute neurasthenia, and differs from chronic neurasthenia very much as any acute attack differs from its chronic form. It is a question only of permanence and degree, but the basis of both is impoverishment of nervous force, and waste of nerve-tissue in excess of repair. Nervousness is really nervelessness.*

As illustrative, on the other hand, of the lithæmic condition, I offer the following case:

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* "A Practical Treatise on Nervous Exhaustion," George M. Beard, M. D.

Mr. N., aged forty-three, a stout gentleman with a somewhat sallow complexion, consulted me for a variety of symptoms which he supposed to be neurasthenic, and for the relief of which he had taken many "nerve-tonics," together with a "course of electricity," but with no appreciable benefit. He suffered from periodical attacks of constipation, and at these times he became so depressed and irritable as to render his family exceedingly uncomfortable. He himself suffered most of all from this lack of mental control, and deplored it beyond measure. For his constipation he had been accustomed to take much fruit and to rely on the saline waters, but gave little heed to his diet, eating heartily of whatever he liked, and invariably taking wine with his dinner. He slept well, and when by the use of these waters or after an attack of diarrhœa the clogged system became in a measure unloaded, he felt as well and as active as ever. Several examinations of his urine revealed the fact that when he was constipated and depressed uric acid was present in abundance, but when his bowels moved freely and he was feeling fairly well hardly a trace could be found. Noises in the ear were a most annoying symptom, ceasing when the urine cleared, and invariably coming on in full force with the appearance of uric acid.

When it was explained to this patient that he was not in any way neurasthenic, but that the cause and cure of his distressing symptoms depended largely if not altogether upon his food and drink and his habits of exercise, the statement seemed a revelation to him. He readily consented to a great decrease in the albuminoid forms of food, total abstinence from alcoholic stimulants, and out-of-door exercise by walking for at least five miles each day.

No medication was attempted through the whole course of this régime, unless the occasional dose of a third of a tumbler of Rubinat water could be thus designated.

Under this dietetic change and increased bodily exercise the improvement in the condition of this patient was radical and rapid. The action of his bowels became regular and free, and in saying this all is said as regards his other symptoms. The condition of his bowels was the index of his mental and physical condition. When he was constipated, uric acid, the product of imperfect oxygenation, invariably appeared in the urine, associated with cold hands and feet, noises in the ears, heaviness or rather a sense of constriction about the head, and excessive irritability of temper. With the relief of the constipation all these symptoms disappeared, and so long as he faithfully follows the prescribed method of living his functions are properly performed.

Functional diseases of the nervous system, and indeed all forms of functional derangement, are perhaps practically more important for our consideration than those that are organic or structural in character. Long experience has taught us how very little all our boasted therapeutics amounts to in dealing with any progressive degeneration of nerve-tissue.

John Quincy Adams, referring to himself a short time before his death, said that the house was tumbling to pieces and the landlord refused to make further repairs. In the degenerative changes brought on by disease, by injuries, or excesses, very much the same rule prevails, and when nature withholds her aid our art is practically powerless. With what in our ignorance we term functional diseases the case is widely different; nature stands ever ready to aid in the cure if only the opportunity be given. Neurasthenia is probably seldom if ever taken for organic disease of the nervous system except by the patient himself, and therefore no mistakes of treatment need follow in this connection, but it is frequently mistaken for lithæmia and other faults of assimilation that result in radical errors of treatment. It might be suggested that the presence of uric acid in the urine ought to be a sufficient diagnostic sign, but uric acid is found in neurasthenic patients and is not at all times found in the lithæmic.

Other objective as well as subjective symptoms therefore enter as no unimportant factors in aiding toward a correct diagnosis.

According to my own experience, one of the most common and distinctive points of differential diagnosis between lithæmia and neurasthenia is the difference in the character of the mental phenomena. Both the lithæmic and the neurasthenic suffer from mental depression and a profound sense of misery, more marked indeed in the former than in the latter condition. While, however, the neurasthenic may suffer from the deepest melancholy, and imagine himself heir to a thousand ills, he becomes the victim, as a rule, of no such irritability and unreasonable outbursts of temper as the man whose brain is actually poisoned by the imperfectly transformed products of digestion. The neurasthenic may be at times extremely irritable, but this irritability is more passive than active, and any ebullition of angry feeling is quite evanescent. His demeanor is, as a rule, quiet, and there is but little manifest tendency to make those dependent upon him miserable by his words and actions. The touchy mood of the lithæmic, on the contrary, may last for days or weeks. It is due to actual toxæmia, is often if not generally accompanied by obstinate constipation, and may be relieved completely by the action of a cholagogue cathartic.

In neurasthenia, again, cold hands and feet are not by any means the rule, but in intestinal and liver derangements the nitrogenized wastes circulating in the blood cause, by their irritation, tonic spasm of the arterioles, resulting in the cold hands and feet so bitterly complained of by the sufferers from lithæmia. The condition of the tongue is an important diagnostic aid. In lithæmia it is coated far more frequently and to a greater extent than in neurasthenia, but in some cases of lithæmia the tongue is but slightly affected. It may appear at first sight perfectly normal, and it is only when looked at carefully from the side that an unnatural brownish color is observed. It is in such cases as this that mistakes in diagnosis are frequently made. As regards the pulse, it may be said that in lithæmia it is slow rather than fast, and in neurasthenia fast rather than slow. In neurasthenia the oxalates are frequently found in abundance, while in lithæmia the oxalates are not usual.

It is not my purpose, nor do I deem it possible, in a single article, to enter exhaustively into the consideration of the symptoms of neurasthenia as they differ from those of lithæmia. The symptoms of the former are innumerable; those of the latter comparatively few and well defined. No one example of neurasthenia illustrates more than a very small fraction of the great army of symptoms that have been observed in connection with this disease, and it is for this reason that so many have expressed doubts as to the propriety of any such formulation as neurasthenia.

On the other hand, making allowances for constitutional differences and occasional aggravated forms, cases of lithæmia are very much alike, and when one has seen a few such cases he has seen them all.

If it were practicable to take a hundred cases of neurasthenia and write the sum-total of symptoms, objective and subjective, and do likewise with the same number of lithæmic cases, the result would be an interesting study—indicating that, in the fullness of their manifestation, the two diseases are symptomatically very wide apart, however similar they may appear when compared singly.

The treatment of neurasthenia and lithæmia is as widely different as their nature and causation. In the management of individual examples of both these conditions the minor treatment is often necessarily varied to meet special annoying symptoms.

In lithæmia, for example, constipation may be met by the moderate use of mineral waters, especially of the Carlsbad and Rubinat varieties, because of the large amount of sulphate of sodium they contain, and occasionally more active cholagogue cathartics can be used with advantage. The natural lithic waters are also of value and always in order. As for neurasthenia, the remedies suggested for its relief are as numerous as the symptoms which it presents, and their enumeration alone would fill a page.

If we once fully appreciate the fact that the two diseases demand diametrically opposite methods of treatment, that the relief of lithæmia in great measure depends upon, as it is caused by, the food we eat and what we drink, as well as habits of exercise, and that neurasthenia is caused by worry and work and nervous strain, our knowledge of the effects of food in the organism, together with the exercise of ordinary sense and judgment, will enable us to deal intelligently with both these conditions.

A CASE OF
HYPERTROPHIC CARDIAC DILATATION
PRESENTING MANY SYMPTOMS STRIKINGLY SIMILAR TO THOSE OF
ANEURYSM OF THE THORACIC AORTA.

By W. P. SPRATLING, M. D.,
NEW JERSEY STATE ASYLUM FOR THE INSANE.

The case related below was of unusual interest, possessing as it did the more prominent features and symptoms, with one exception, of an aneurysm of the aorta within the thoracic cavity. A similarity of symptoms present in two different diseases must mean a similarity of causes or conditions which create these symptoms. Such was the case here, as will be presently shown. The pathological changes to be met with, or the causes which produce such changes, either within the walls of a dilated heart or in the coats of an artery at the point where the morbid change had its inception, or at any point to which the change had progressed, need not be mentioned or reviewed here. It suffices to show that the result, as illustrated by this, was virtually the same.

Before describing the heart as it appeared at the post-mortem examination, it may be well to give a brief history of the case.

I was requested to see Miss K. L. for the first time on the evening of November 25, 1887. I found her an extremely delicate young lady twenty years of age. She had never enjoyed good health, and had for the past two years been an invalid. When first seen she was seated upon the edge of a low bed with her body bent well forward. She was making pressure with both hands just over the region of the stomach, and plainly showed that she was suffering most agonizing pain. The least exertion or effort to sit upright would bring on violent fits of coughing.

Gastric irritability was present to an extreme degree. She could not retain for a moment either food or medicine upon the stomach. Nausea was constantly present. The skin was hot and dry. Jaundice was fairly well marked, the conjunctivæ being more deeply stained than the skin. The temperature was 102° F. The radial pulse could not be felt on the right side and was barely appreciable on the left, being so rapid and irregular that it could not be satisfactorily counted. The feet and hands were cold. There was considerable œdema of the feet, also some ascites. The liver dullness extended three inches lower than normal. Percussion, when most gently practiced over this organ, as it emerged from under the lowermost rib, gave rise to much pain.

Inspection of the chest showed a large and irregular prominence located on the median line about four inches above the ensiform cartilage. It measured three inches in diameter and stood out fully half an inch above the surrounding surface. The percussion-note over this elevation was decidedly dull. Auscultation over it gave negative results. The area of the heart's dullness was greatly increased. This may be better appreciated when the size of the organ is made known. No distinctive bruit could be heard at any point. The heart's beats numbered 130 to the minute.

The examination was not thorough or at all satisfactory, owing to the great suffering of the patient, her efforts at vomiting, and her frequent changes of position. An aneurysm of the aorta, ascending portion, was suspected. Absence of bruit was taken into consideration, but not regarded as of decisive importance in view of the other symptoms present.

The patient was given morphine in sufficiently large doses to allay cough and pain and to relieve gastric irritability. Other medicines were ordered to be given during the night. Next morning she was more comfortable, sitting up, and comparatively free from pain. Efforts at vomiting were very infrequent. She had taken a small quantity of milk at breakfast and had retained it. Restrictions were put upon the diet and all unnecessary exertion cautioned against.

Eight hours after my second and last visit she died very suddenly.

An autopsy was held twenty-six hours after death. The body was poorly nourished. Rigor mortis was not well marked. The thorax being opened, the heart and larger blood-vessels were examined *in situ*. At a casual glance the heart seemed to occupy half the thoracic cavity. No lung-tissue was visible. A fruitless effort was made to pinch up the pericardium, but it was found to be so intimately adherent to the heart that careful and tedious dissection was required to remove it. Upon lifting the heart from its bed, all its cavities were found to be greatly distended. The greatest change had occurred in the left auricle. Its capacity had been increased to eight ounces, as was afterward estimated. A large incision was made into it, through which the contained mass of dark, firmly clotted blood was pressed out. The walls of the auricle had undergone no atrophy, and were of normal thickness. The capacity of each cavity of the heart had been increased from two to three ounces above the normal. The walls of the right and left ventricles had undergone considerable hypertrophy. The heart muscle presented on section a much paler appearance than usual. When freed of all contained clots, the heart weighed twenty-two ounces and a quarter.

Upon examination of the interior of the heart, the mitral orifice was found to be much contracted, the opening having the appearance of a narrow slit. The valve's segments were thickened and rigid. All the other valves were in fair condition. The external measurements of the heart were as follows: From base to apex, eight inches and a quarter; greatest breadth, six inches and three quarters; thickness, four inches and a half. Its size and capacity were most remarkable, considering what a normal heart should be in such an individual.

Death in this case was undoubtedly due to heart paralysis, as the result of sudden and complete overdistension, since each cavity was found filled with clotted blood.

MORRIS PLAINS, *January 1, 1888.*

A CASE OF EXTRA-GENITAL CHANCRE,
AND PROPOSED MEASURES FOR PREVENTING THE SPREAD OF SYPHILIS.

BY WILLIAM C. WOOD, M. D.,
GLOVERSVILLE, N. Y.

A LITTLE more than three years ago I was consulted by a young man who had an indurated chancre on the knuckle of the little finger of his right hand. In a drunken row he had struck a companion on the mouth, just scratching the skin—"hardly drew blood," he said. It refused to heal in spite of the salves he applied, and he wanted to know what it was.

At that time I was treating the person struck for syphilitic sore mouth. I informed him of the nature of the sore and put him on specific treatment. This he followed up faithfully for about two months, developing meanwhile slight constitutional symptoms, but, being of dissipated habits, he soon neglected to attend to himself.

About eighteen months later he sent for me to come and see his baby. Arriving at his house, I found he had married over a year before, and that the child, which was but a few weeks old, had "had a rash ever since it was born." It died the day I saw it—clearly enough from hereditary syphilis. I could not get him to take medicine, as he said he felt well enough without it. He soon after, however, began to have a cough, took patent medicines, drank to excess, and generally neglected himself until about a month ago, when he again called me. He was then in the last stages of phthisis, and soon died.

I report the case to call attention to the lesson it teaches—namely, the necessity of some State regulation isolating the syphilitic. If so much ado is to be made about leprosy as was done by the authorities in Philadelphia some time since, how much more should we make strenuous efforts to "wipe out" this disease, which is certainly as productive of misery and death as the other, and is as much to be dreaded and shunned!

The proposition I would advocate would be something like the following, which, while it renders the recognition and licensing of prostitution necessary, does so for the protection of society; for is it not true that the innocent suffer to a large extent from syphilis?

1. The registration of prostitutes and their examination by competent medical officers at stated periods.

2. The reporting of all cases of syphilis coming under their notice by private practitioners, each physician to make a sworn statement to the Board of Health monthly of all cases of syphilis coming under his notice. Then let the patient be examined by a board of specialists (to prevent any possible mistakes), and, if found syphilitic, be placed in quarantine for a time to be determined; after that to report at stated intervals to the board.

Marriage without the consent of the board to be promptly and severely punished.

I think it could be so arranged that if the patient submitted quietly and willingly to the directions of the "sanitary board," there need be but little if any publicity attached.

This may seem a severe method, but the disease requires severe measures to stamp it out. Just look at it! A man contracts syphilis. He avers, and I have every reason to believe him, that he takes care of himself and avoids, so far as he can, exposing others; yet from striking him on the mouth another gets syphilis, gives it to his wife, a child is born to die of the same disease, and we can not tell how far or through what channels it may yet spread.

TWO CASES OF GANGRENE
FOLLOWING THE HYPODERMIC USE OF COCAINE.

BY J. A. NICHOLS, M.D.,
PLATTSBURG, N. Y.

IN a moderately active surgical practice the writer has, within the past two years, resorted to the method of Dr. Corning in producing local anæsthesia by the hypodermic injection of a solution of cocaine for minor surgical operations many times—no fewer than thirty. No untoward results have attended its use, either local or constitutional, save in the two cases cited below.

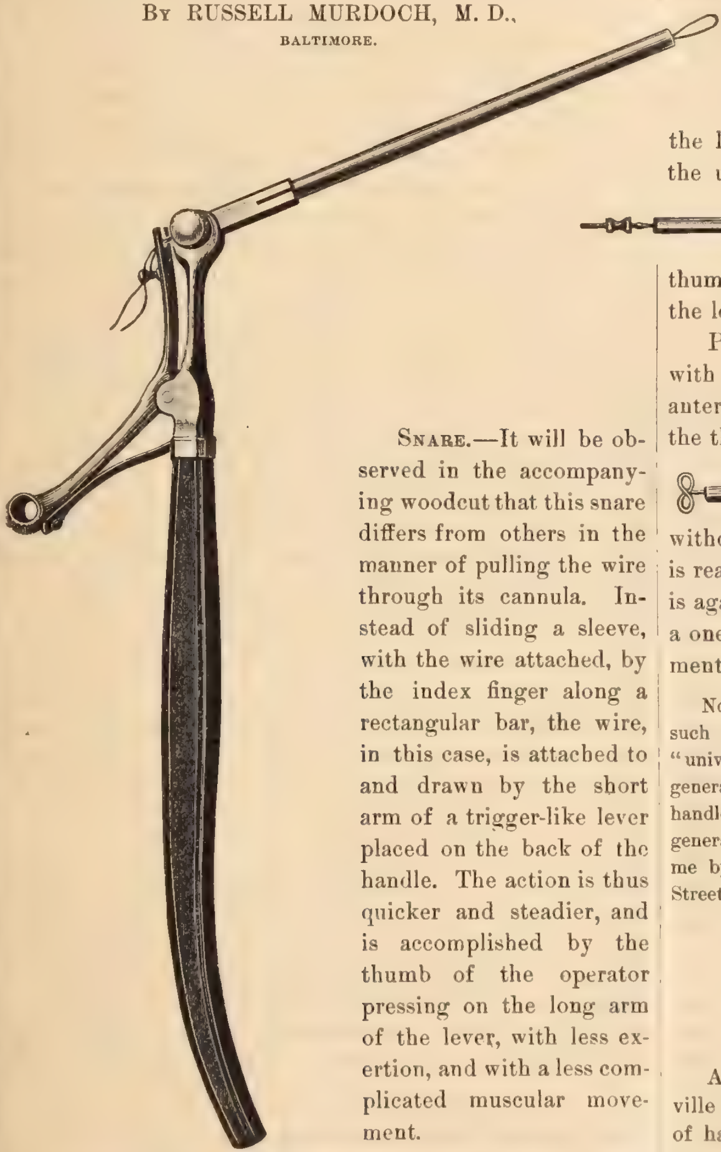
CASE I.—F. D., aged sixty-five, robust and healthy, came to me with a crushing injury to the third finger of the right hand, rendering amputation of the last phalanx necessary. Local anæsthesia was produced by the injection of fifteen minims of a 4-per-cent. solution of cocaine hydrochloride (Parke, Davis, & Co.) after first applying an elastic ligature. Strict antisepsis was observed. The flaps, made amply long, were of healthy tissue, and not constricted by the sutures. The operation, from the injection of the cocaine to its completion, did not occupy more than fifteen minutes. On the fourth day the finger was examined, and both flaps were found to be gangrenous. The finger was re-amputated, under the use of cocaine as before, but with much better result, healing taking place by first intention.

CASE II.—H., aged twenty-four, healthy, presented himself for treatment with congenital phimosis. Cocaine was used as in the preceding case, and circumcision performed antiseptically, requiring twenty minutes. The operation was almost bloodless. The line of incision was painted with flexile collodion, the patient was confined to his bed, and cold-water dressings were applied. On the third day evidence of gangrene manifested itself, attacking both mucous membrane and integument. The patch of sphacelus was an inch and a half long and half an inch wide. The space left healed by granulation.

This was the eighth circumcision performed by the writer in which cocaine was used, and the only one attended with anything but good results. Inasmuch as these are the only two cases of gangrene I have had following any surgical operation, either with or without the use of cocaine, the question arises, What part, if any, did the cocaine play in its causation?

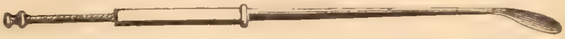
EAR INSTRUMENTS.

By RUSSELL MURDOCH, M. D.,
BALTIMORE.

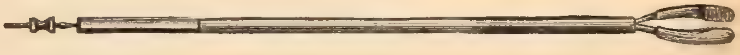


Snare.—It will be observed in the accompanying woodcut that this snare differs from others in the manner of pulling the wire through its cannula. Instead of sliding a sleeve, with the wire attached, by the index finger along a rectangular bar, the wire, in this case, is attached to and drawn by the short arm of a trigger-like lever placed on the back of the handle. The action is thus quicker and steadier, and is accomplished by the thumb of the operator pressing on the long arm of the lever, with less exertion, and with a less complicated muscular movement.

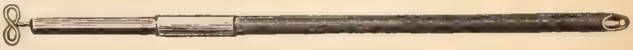
Furuncle Knife.—This second instrument, like the cannula of the snare, is passed through the sleeve portion of the handle, and, unlike it, is not fixed by the set-screw, but is allowed to have free play through it. It is then, by means of a spool-like button, attached to the forked extremity of the small end of the lever, in order to make which attachment the button has to be lifted over the fork, and therefore, to accomplish that purpose, the proximal end of the knife is made flexible by a closely wrapped spiral wire around a central thin flexible core. In order, also, that the backward motion of the lever may alone be imparted to the knife without its accompanying upward one and thus locking the knife in the sleeve, this flexible end rises with the lever, while the stiff, closely fitting rectangular shank passes directly backward. The sleeve, however, is split in front, so as to allow a slight downward movement of the blade. This, added to the acute angle at which the blade is set to the shank, does away with a part of the usual downward pressure from the hand, as the knife rapidly cuts its way through the exquisitely painful furuncles of the external auditory meatus.



Cannula Forceps.—This consists of a cannula, and a piston split into blades in front, and flexible, with a similar spool-like button for attachment to the lever in the rear. The lever operates the blades with the utmost precision, and imparts to them, as long as the thumb presses on the milled extremity of the long arm of the lever, the most unyielding grasp.



Porte-acide.—This likewise consists of a fixed cannula with a movable piston, also attached to the lever. The anterior cup-shaped extremity is made to protrude by the thumb on the lever, and, when armed with the acid, is withdrawn; then, when it is thus guarded, the desired spot is reached in the meatus, and it is protruded, after which it is again shielded and withdrawn. The convenience of such a one-handed application is the chief claim that this instrument offers for presentation to the profession.



Note.—It need hardly be remarked that other instruments in use, such as a probe, tenotome, etc., can be inserted in the sleeve of this "universal" handle, and fixed by the set-screw; or that the size and general shape of the above-described instruments, as well as those of the handle, have been freely borrowed from well-known instruments in general use. The modifications above described have been made for me by Charles Newhause, instrument-maker, No. 506 North Eutaw Street, Baltimore.

ANTIPYRINE IN ASTHMA.

By JOHN L. DODGE, M. D.,
HOUSE PHYSICIAN, LOUISVILLE CITY HOSPITAL.

A. E., aged sixty, a laborer, was admitted into the Louisville City Hospital, November 16, 1887. He gave a history of having suffered from asthma for three years, and of having attacks almost every night during this period. The heart was normal. There was no bronchitis, and but very little emphysema. From November 16th to December 17th he had from one to two attacks every night, and occasionally one during the daytime. During this time lobelia, grindelia robusta, iodide of potassium, and, lastly, pyridine, were tried. For a while these remedies seemed to diminish the severity of the paroxysms, but did not affect their frequency. Toward the last, however, they seemed to lose their effects, and from December 12th to December 17th the attacks became more frequent and more severe. On December 17th I ordered antipyrine in fifteen-grain doses, at 6 P. M., 12 P. M., and 12 M. The next morning the patient reported having passed a comparatively comfortable night, having had only one paroxysm, and that a light one. The dose was repeated on the 18th, with the same happy effect. On December 19th I ordered antipyrine, five grains every three hours during the day, and fifteen grains at 9 P. M. and 3 A. M. This was kept up until December 23d, when the medicine was withdrawn, as the paroxysms had ceased entirely. The next day there was some slight gastric disturbance, and arsenic, nux vomica, and pepsin were ordered. This mixture was given for two days and its use was then discontinued, as he complained of nothing, and pronounced himself well.

On January 6, 1888, he was dismissed at his own request, there having so far been no return of his asthma.

I fully share with the profession the well-founded prejudice against reporting single cases of this kind, but the relief was so remarkably quick and complete that I can not refrain from making it public, especially as this seems to be a new field for antipyrine.

Correspondence.

LETTER FROM LONDON.

The Hendon Cow Disease and Vaccinia.—The Medical Profession and Homœopathy.—The Case of the Crown Prince of Germany.—A Medical Man Convicted of Murder.

LONDON, *January 10, 1888.*

LOOKING back over the year that has just closed, there does not appear to have been any event in the medical world of striking importance. The discussion on the causation of scarlet fever by a disease in the cow, originating from the investigations of Messrs. Power and Klein, has perhaps created the greatest interest. The latest contribution to this discussion was made at a special meeting of the Pathological Society just before Christmas, when Professor Crookshank gave the results of his investigations carried out on behalf of the Agricultural Department of the Home Office. He described a disease occurring in cows, manifested by the formation of vesicles and ulcers on the teats and udder, and transferred from one animal to another by the hands of the milkers. He considered that this disease presented the same clinical features as those described in the Hendon epidemic, because it affected man, producing pustules on the fingers, in the same manner as had been observed in the Hendon outbreak. From the ulcers he had succeeded in cultivating a *Streptococcus* corresponding in every respect with that obtained by Dr. Klein. Although the milk from these cows was extensively distributed, none of the consumers of it were affected with scarlatina. Further investigation showed that he had to do with true Jennerian cow-pox, which was proved by the discovery of a boy at one of the farms with an ulcer on his hand and another on his cheek, which latter developed into a typical pock, and calves inoculated from the boy developed true vaccinia. It ought to be added that Dr. Klein does not admit that the disease Professor Crookshank described is identical with that known as the Hendon disease, so doubtless further researches will be called for.

For some time past a correspondence has been carried on in the columns of our leading daily paper, the "Times," on the subject of homœopathy. It was originated by Lord Grimthorpe, who had decided to take up the cudgels on behalf of the homœopathists in consequence of the intolerant attitude adopted toward them by the general body of medical practitioners. Lord Grimthorpe is very well known to readers of the "Times" as one who is constantly rushing into print and discussing matters of which he has not thorough cognizance, and the present occasion forms no exception to the rule; but his letters are always amusing, whether one accepts his facts or not. He has succeeded in drawing from a well-known specialist, who writes over the initials R. B. C., a very clear statement of some of the reasons why regular practitioners will not meet homœopaths in consultation. I often wonder and try to find out what the layman's idea of homœopathy is, but I have not yet succeeded. That any one educated as a medical man can really believe that a medicine becomes more potent the more it is diluted, and that shaking the medicine after dilution still further increases its potency, seems impossible; it reminds one of the state of affairs two centuries or more ago, when a certain Sir Kenelm Digby had a powder which, if placed on the sword or other weapon that had caused a wound, would heal the wound. The difference between the two beliefs, if there is any, is only in degree. "R. B. C." practically said we did not meet homœopaths, because we believed them to be knaves, a view which is certainly supported by the eagerness which some of the most distinguished homœopaths have displayed to be received back into the true fold after they have made their fortunes.

The opinion seems to be gradually gaining ground here that, after all, the disease from which the Crown Prince of Germany is suffering may not be cancer. It is said that the new growths which caused so much alarm some six weeks ago have completely subsided, which certainly does not look much like the behavior of any form of cancer with which most of us are familiar. Then, again, the suppuration which was reported not long ago is strongly suggestive of chronic inflammation rather than malignant disease, but Sir Morell Mackenzie and the others who have examined the illustrious patient refuse to say anything at present indicative of a confession of an error in diagnosis.

There has recently been a very painful trial for murder in Ireland. Dr. Cross, a retired surgeon-major, has just been convicted of poisoning his wife with arsenic. The evidence was circumstantial; the lady died after some few weeks' illness, and at the last was attended only by her husband, who was alone with her when she died, and who made untrue statements as to the cause of her death. Within a few days of his wife's death, Dr. Cross married a young lady who had previously lived with him as his wife at a hotel in Dublin. It was this very speedy marriage that caused the relatives of the deceased woman to make inquiries which culminated in an exhumation of the body and in the discovery of a large quantity of arsenic in the viscera. There was no evidence as to when Dr. Cross obtained the poison or how he administered it, but his conduct was not consistent with innocence, and public opinion approves of the verdict.

Glassblowers' Syphilis.—"Professor E. de Smet, of Brussels, in lecturing on a case of syphilis occurring in the mouth of a glassblower," says the "Lancet," "referred to several epidemics which have been reported as having occurred among artisans of this description, and remarked that only two plans for preventing these outbreaks had been devised—viz., giving a separate movable mouth-piece to each man and instituting frequent rigorous periodical inspections of the persons of the employees. The first plan is always declared by the workmen to be impracticable from the loss of time which it would occasion by fitting the different mouth-pieces on the tubes. The second would of course be resisted by the men, but he thinks their objections could be overcome by showing them the danger to themselves and their families of the present system."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 18, 1888.

DANGER IN THE COFFEE-CUP.

Has coffee any noxious property? The coffee-lovers say not, though they readily concede that the abuse of tobacco, alcohol, or opium may result in serious damage. It is assumed that coffee is a unique substance without power to harm, regardless of the quantities absorbed, or the age, temperament, and disposition of the one who makes use of it. Now, is this really true? Guelliot, of Reims, France, would have us believe otherwise. He publishes observations upon twenty-three cases of chronic *caféisme* in the "Revue générale de clinique et de thérapeutique" for December 15, 1887, that are at once instructive and interesting. Coffee, it seems, is by no means an inert substance, but is capable of producing serious disturbance in the digestive tract and the nervous system. Women are the greatest sufferers, seventeen, or nearly seventy-four per cent., of the cases under observation having been those of women. This large percentage is owing to several circumstances. One is the too frequent mode of feminine life—monotonous, sedentary, and often lacking in inspiration. Staying in the house too much breeds a sort of insanity always, and turns a home into a hospital. Another reason for peculiar susceptibility to coffee-poisoning is the naturally impressionable nervous system of womankind. A third factor in the case, which Dr. Guelliot ignores, is the fact that men indulge in stronger stimulants. They seek an "ideal condition" (Maudsley) through the medium of tobacco, alcohol, or opium, leaving coffee and tea to the indoor sex. An absurd nursery rhyme hits off this difference rather well:

> "Hinkety-winkety, wolloppy wee,
> How does the Emperor take his tea?
> He takes it with spices,
> He takes it in slices,
> And that's how the Emperor takes his tea."

But *revenons à nos moutons*—the coffee-bibbers. Characteristic symptoms of *caféisme* are anorexia, disturbances of sleep, trembling of the lips and tongue, attacks of gastralgia, different kinds of neuralgia, dyspepsia, and leucorrhœa that is often profuse and always the most persistent symptom of coffee-poisoning. The following is the order of abnormal manifestations, according to Dr. Guelliot's table, found in twenty-three cases: Anorexia in eighteen, disturbances of sleep in sixteen, trembling of the lips and tongue in sixteen, leucorrhœa in twelve, gastralgia in eleven, dyspepsia in ten, neuralgia in various forms in ten, cephalalgia in eight, vertigo and convulsive attacks in four, obstinate constipation in four, and constipation alternating with attacks of diarrhœa in three. One woman under observation, thirty-five years of age and of attractive appearance, having a fondness for grains of roasted coffee, kept her pocket full of them, and, like the sailor's wife that the witch in Macbeth tells about, "she munched, and munched, and munched," with the result of gradually breaking down her health. This woman's brunette shades of coloring gave way in time to an earthy hue. There was gastralgia, with extreme constipation, and then enteralgia, followed by progressive emaciation and anorexia. Alarm at her condition reduced the munching process and led to its final abandonment.

The quantity and quality of the coffee are ætiological factors of the first importance. In Belgium, for instance, coffee seems not such a bad thing, probably from the fact that it is largely mixed with chicory. But in oriental countries coffee is blacker than it is painted. Writing in the last century, Zimmermann says: "The Turks suffer as well as ourselves from the abuse of coffee. It makes them feeble, stupid, impotent even, especially when opium is used as well. Thus it comes about that the Turks despise their coffee-bibbers as we do our drunkards." Youth is another circumstance that favors *caféisme*. It is not uncommon for ignorant parents of the lower class to give their children coffee instead of milk. A child of eleven months, looking more like a picked crow than a baby, was brought into one of the hospitals for treatment. Its only food for a long time had been coffee pure and simple, sometimes with a little milk added, oftener not. One whole week of persistent effort was necessary to induce the unfortunate infant to take milk, which it did willingly at the end of that period. The heathenish parents considered such nourishment insufficient and removed the little one, in order to carry on the starving process unmolested. When the poor tot first came under observation its deep yellow skin hung in folds over its frail body, after the manner of a misfit garment handed down from an elder relative. A more melancholy spectacle than this unhappy child can hardly be imagined. It was thin, dried up, miserable, and altogether a most sorry-looking little animal.

Chronic *caféiques* are invariably thin, sometimes of almost rail-like slenderness. This distinguishes them from the victims of alcoholic intoxication, who are often fat and ruddy. The features are pinched, the face is pale and wrinkled, the complexion is yellowish-gray and earthy. The pulse is usually weak, compressible, and frequent. There is an anæmic murmur about the heart, though our French investigator finds palpitation extremely rare. He calls attention to the fact that, even when insomnia does not exist, sleep is troubled by anxious dreams of drowning, death, wild beasts, and the like. Menstruation is regular, the flow being augmented with occasional slight metrorrhagia during the inter-menstrual periods. *Caféisme* has no apparent effect upon the feminine reproductive organs. One woman, who had indulged in eight or ten cups of coffee a day from earliest childhood, reported the successful termination of eleven pregnancies. In men, one effect of *caféisme* is to diminish and sometimes abolish sexual desire. This is as true of the European as of the Asiatic. The neuralgias that are induced by coffee-poisoning are more remarkable for persistence than intensity. There may be cramps and muscular twitchings. Migraine has also been caused by it. In the matter of treatment, moral suasion, hydrotherapy, regulated exercise, sedatives, and tonics are in order.

In what does the abuse of coffee consist? Impossible to say, for the only standard of comparison is the individual himself—oftener herself. In a general way, two or three cups daily may be considered the maximum quantity consistent with health. Coffee is a good thing, pleasant and refreshing, alike useful to the man of brain and the man of brawn. Not every one is poisoned by it. Burton mentions it in the "Anatomy of Melancholy" (1621) and attributes to it qualities we gratefully recognize to-day. "The Turks," he says, "have a drink called coffee (for they use no wine), so named from a berry as black as soot and as bitter, which they sip as warm as they can suffer, because they find by experience that that kind of drink so used helpeth digestion and procureth alacrity." Anything that "helpeth digestion" is a real benefaction, and whatever "procureth alacrity" deserves well of humanity at large. Because coffee intoxicates and is sometimes injurious, it does not follow that its proscription would necessarily be a good thing. Let us trust that no prohibition society will make total abstinence from coffee a political watchword. Rather let perish in the abyss of oblivion all observations upon *caféisme!* Dr. Guelliot affirms that he would be more than "desolated" should his exposition of the evils of coffee cause that delicious beverage to fall under the ban of any temperance society. Perhaps there is but small cause for alarm, as tradition favors the use of coffee and tea. Science also, in the shape of the excellent Liebig, has pointed out the fact that the same peculiar principle existing in certain otherwise different plants has made decoctions of these same plants the favorite drink of almost all nations. This principle, he states, called theine, caffeine, or theobromine, according to circumstances, furnishes the elements of the bile. Hence its peculiar adaptation to the needs of the human system. Thus it will be perceived how it helpeth digestion and procureth alacrity, containing as it does properties that in some form go to build up the complex machinery of man. As excess of anything is limitation, so too much coffee is a hurt and a hindrance Used and not abused, it is an every-day blessing deserving of gratitude and praise.

ERYTHROPHLŒINE, ANOTHER ALLEGED ANÆSTHETIC.

In certain happy communities on the west coast of Africa judicial inquiries in criminal cases are carried on with a simplicity calculated to make many a civilized Dogberry tear his hair with envy. Circumstantial evidence, the question of insanity, flaws in the indictment, the inscrutable moods of jurymen, and all the other elements of doubt that hover about our clumsy processes of trial are wholly done away with. The procedure is simply to compel the accused to take an ordeal poison; if it has no effect on him, or only a certain sort of effect, he is innocent, but, if it has certain other effects, he is adjudged guilty, and forthwith stoned to death or got rid of by some other cheerful process. Among the poisons employed for the purpose is a potion made from *casca-bark*, *sassy-bark*, or *saucy-bark*, the bark of a leguminous tree called by Don the *Erythrophlœum guineense*, by Procter the *Erythrophlœum judiciale*, and by Guillemin and Perrottet the *Fillæa suaveolens.* Besides using this bark as an ordeal poison, the natives are said to employ it as a remedy for dysentery, diarrhœa, and colic. So long ago as the year 1859, Dr. William A. Hammond and Dr. S. Weir Mitchell made a series of experiments on animals with sassy-bark, and an interesting summary of their observations, as well as those afterward made by others, is given in Stillé and Maisch's "National Dispensatory." Among the effects noticed by Hammond and Mitchell was "a degree of anæsthesia." In 1876 Gallois and Hardy discovered in the bark an alkaloid to which the name of erythrophlœine has been given.

In the "Allgemeine medizinische Central-Zeitung" for 1888, No. 3, Dr. L. Lewin, of Berlin, gives an account of his experiments with this alkaloid, abstracts of which are to be found in the "Internationale klinische Rundschau" for January 22, 1888, and in the "Revue générale de clinique et de thérapeutique" for January 26th. Lewin first mentions his experiments with *haya* or *hayab*, a red mass spoken of by Livingstone as causing stiffness and insensibility of the tongue when taken into the mouth. Weak watery solutions of this substance, instilled into the eye in cats, caused after the lapse of from fifteen to twenty minutes an anæsthesia which lasted from ten to twenty-four hours. Injected into frogs and other animals, they caused a diminished frequency of the heart's action, followed by cardiac paralysis, and from time to time a convulsive wave passed over the animal, beginning at the eyes, advancing to the surface of the abdomen, and extending to the tip of the tail. In animals capable of vomiting, emesis occurred immediately after the injection.

Lewin subsequently became convinced that the poisonous principle of *hayab* was identical with the alkaloid erythrophlœine, and he proceeds to give an account of his experiments with the latter. Doses of two centigrammes (about three tenths of a grain) proved fatal to dogs, and proportionately smaller doses to rabbits. A solution of the strength of two tenths of one per cent., instilled into a cat's eye, caused in the course of fifteen or twenty minutes an anæsthesia more profound and more lasting than the observer had before thought possible; even with weaker solutions the effect was perceptible at the end of a day, two days, and two days and a half. Under the use of the solution mentioned, the cornea remained clear; when, however, a two-per-cent. solution was used, intense irritation and cloudiness of the cornea were caused, but they subsided spontaneously in the course of a few days. When erythrophlœine was injected into one of the limbs of an animal intensely tetanized with strychnine, no more spasms took place in that limb. In guinea-pigs, in fifteen minutes after an injection under the skin of the back, an incision reaching to the muscles could be made, and the muscles themselves punctured, without calling forth any expression of pain. If too large doses were used, the animal died in convulsions, but Lewin thinks that the action of the drug is readily controllable if very small doses are used at the start.

Lewin imagines that erythrophlœine is destined to cast cocaine quite into the shade. We shall see. The previous experiments to which we have referred, together with others by Brunton and Pye, show that the agent is, to say the least, one with which too much care can not be taken when it is used on man. It is always well to be cautious in the use of new drugs, and it is imperative in the case of violent poisons concerning which little is known. Besides, several proposed substitutes for cocaine have recently proved illusory, and that may temper the ardor of those who are inclined to supersede a tried and comparatively safe drug with others about which we have yet almost everything to learn.

MINOR PARAGRAPHS.

PROFESSOR NEWBERRY.

It is always gratifying to members of the medical profession to learn of the conspicuous achievements of any of their number in the domain of pure science. Our readers will therefore receive with pleasure the announcement, made in the "Pall Mall Gazette," that this year the Murchison medal of the Geological Society of London is to be awarded to Dr. J. S. Newberry, of the faculty of Columbia College. Equally gratifying is it to learn from a letter published in the same paper, quoted in the New York "Evening Post," of the writer's appreciation of Professor Newberry's services in the United States Sanitary Commission during our civil war, when he was still a practitioner of medicine.

NEW VISITING-LISTS.

Dr. Charles H. Shears has prepared a new visiting-list, and it is issued by the publishers of this Journal, with the title of "The New York Medical Journal Visiting-list and Complete Pocket Account-book." Besides a considerable amount of condensed information of a miscellaneous character, it contains pages arranged for three hundred and seventy-five accounts, to be kept according to a novel and highly ingenious plan. A special feature of the book is that its use can be begun at any time.

We are indebted to Dr. Adolf Kállay, of Karlsbad, for a copy of the seventh annual volume of his "Illustrirter ärztlicher Almanach," a pocket account-book of an exceedingly neat appearance. In its general plan it much resembles the "Agenda Medica" of the French. Besides the blank pages for memoranda, it contains a great deal of information about the medical schools of Europe, useful therapeutical data, and comparative tables of weights and measures and of thermometric scales, together with biographical sketches and portraits of Krassowsky, Senator, and Mavrogeny.

ITEMS, ETC.

The Alumni Association of Bellevue Hospital Medical College held its annual dinner on Tuesday evening of this week, at the Hotel Buckingham, Dr. David Webster presiding. There was a large and representative attendance of the alumni, and the occasion was highly enjoyable.

The Clinical Society of the New York Post-graduate Medical School and Hospital.—At the meeting to be held this evening, Dr. Henry D. Chapin will read a paper on "The Nutrition of Infants."

A Change of Residence.—Dr. Walter Mendelson has moved to No. 179 West Seventy-fourth Street.

The "Gynecan" Hospital.—An institution bearing this title has recently been established in Philadelphia, with the object of rendering medical and surgical assistance to women who are afflicted with diseases peculiar to their sex. It is to be maintained as a charity, and is an outgrowth from the old dispensary, which for many years has been doing much good work among the poor of that city.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 14, 1888:

DISEASES.	Week ending Feb. 7.		Week ending Feb. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	1	14	2
Scarlet fever	163	26	160	21
Cerebro-spinal meningitis	1	1	2	2
Measles	48	7	64	10
Diphtheria	192	38	187	54
Small-pox	11	1	7	0

Society Meetings for the Coming Week:

Monday, *February 20th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *February 21st:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and Westchester (White Plains), N. Y.; Ogdensburg, N. Y., Medical Association.

Wednesday, *February 22d:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society (conversational).

Thursday, *February 23d:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland).

Friday, *February 24th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *February 25th:* New York Medical and Surgical Society (private).

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-second Annual Meeting, held in Albany, Tuesday, Wednesday, and Thursday, February 7, 8, and 9, 1888.

The President, Dr. Alfred L. Loomis, of New York, in the Chair.

(Concluded from page 158.)

Acute Bright's Disease in Children.—Dr. A. Jacobi, of New York, discussed this part of the subject in a paper to be published hereafter.

Changes in the Eye in Acute Bright's Disease.—Dr. D. B. St. John Roosa, of New York, said there had been practically nothing new to add to this subject since Graefe wrote upon it many years ago. Affections of the eye in Bright's disease, acute or chronic, were comparatively rare. When uræmic amaurosis did occur it came on suddenly, without warning. There was absolutely nothing to be seen with the ophthalmoscope. Was such amaurosis caused by poisoning of the blood or by sudden filling up of the cranial cavity? These were questions for the pathologist. In some cases the pupils reacted. The amaurosis was usually recovered from.

Cardiac Changes in Acute Bright's Disease were discussed by Dr. Van Santvoord, of New York, who said that cardiac dilatation, hypertrophy, and exhaustion might occur secondarily, as in chronic Bright's disease. He asked the question, What gave out, the heart muscle or the nervous mechanism, or both? Certain conditions indicated to him that it was the nervous mechanism. The danger-signal was the high tension of the pulse. The indications for treatment were to lower the tension on the one hand, and to strengthen the heart on the other.

Acute Bright's Disease in the Puerperal State.—Dr. Fordyce Barker, of New York, discussed this subject. He preferred the term albuminuria, as Bright's disease carried terror with it. In his experience structural organic lesion of the kidney did not exist in more than a small proportion of the cases. In about one case out of ten Bright's disease existed prior to pregnancy. Pregnancy had the effect in some cases of increasing the mother's nutritive powers, and she grew plethoric; in others it caused diminished nutrition, the patient becoming chlorotic, anæmic, or hydræmic. The treatment was different in the two classes of cases, especially as regarded diet. Jaborandi and pilocarpine were dangerous in the albuminuria of pregnancy. Labor should be induced only in the presence of uræmic symptoms. Albuminuria was present in about one out of twenty-five cases of pregnancy, convulsions from uræmia took place in about one in 450. The speaker related three cases of uræmic symptoms in pregnant women which seemed to have been controlled by nitro-glycerin administered in doses of one one-hundredth of a grain. He thought amblyopia and amaurosis alone should not be considered indications for the induction of premature labor.

Treatment of Acute Bright's Disease.—Dr. W. S. Ely, of Rochester, in discussing this portion of the subject, emphasized the necessity for considering each case individually. The patient might recover by simple hygienic methods, be benefited by diuretics, or be cured by mineral waters alone. His symptoms might be so grave as to demand for their relief the most prompt and powerful measures.

Intubation of the Larynx of an Adult; Exhibition of New Instruments.—Dr. J. O'Dwyer, of New York, read a paper with this title, in which he stated that he had operated in marked syphilitic stenosis of the larynx in the adult in four cases, and once in diphtheritic laryngitis in the adult. In one of the syphilitic cases he had intubated the larynx fifty or sixty times, at first once a week, afterward at intervals of seven weeks. The longer the tube could be worn the less likely was the cicatricial band to contract. There had been no pulmonary disturbance from entrance of food through the tube.

The History of Abdominal Section in Albany, with a Report of Seventy-five Cases.—Dr. Albert Van Derveer introduced his paper by urging the importance of reporting all cases of abdominal section. The first case on his list, the first in Albany, was that of Dr. March, in 1849. The patient recovered. Dr. March operated in seven cases. The speaker traced the causes of death, and pointed out some of the conditions necessary for success.

Discussion on Salpingitis.

Dr. Goodell, Dr. Mann, and Dr. Mundé, who had been announced to speak, were absent.

Causes.—Dr. C. C. Lee, of New York, discussed this part of the subject.

Prognosis.—Dr. George Seymour, of Utica, said of prognosis that the simpler and most common forms of salpingitis, whether acute or chronic, might all be classed as having an actual tendency to recovery under favorable conditions. Catarrhal salpingitis occurred from anything which would cause endometritis proper. It was rarely primary. It was almost always due to extension of endometritis; true salpingitis was more frequently caused by septic influence than catarrhal salpingitis was; serious salpingitis occurred frequently after abortion, from decomposing membranes, etc.

Medical Treatment.—Dr. F. A. Castle, of New York, summed up his remarks by saying that the medical treatment of salpingitis did not differ from that of pelvic inflammations generally. Owing to the difficulty of making an early diagnosis, and the seriousness of pelvic inflammation generally, it was important that in all such conditions all precautions should be taken as soon as they were seen.

Surgical Treatment.—Dr. W. M. Polk, of New York, said the cases most frequently calling for operative measures were pyosalpinx and hæmatosalpinx; hydrosalpinx less frequently. The abdominal median line was not always to be chosen for the opening. He referred to his remarks on a former occasion on cutting down upon and breaking up adhesions of the tubes and ovaries in certain cases. In catarrhal salpingitis the tubes should not be removed. Dr. Castle had well pointed out the danger of pus entering the peritoneal cavity from the tubes on massage.

Results of Operative Treatment.—Dr. W. Gill Wylie had to report 78 laparotomies done during the past year—8 hysterectomies, with 1 death; 15 cases of removal of large ovarian tumors, with 1 death from nephritis; and 41 operations for removal of the Fallopian tubes or fibroma, with 1 death, also from nephritis. He had removed the tubes altogether in 115 cases, with 6 deaths. About 3 per cent. of the patients had menstruated after the operation. No patient was changed in temperament or appearance.

Dr. Van Derveer agreed with Dr. Polk as to the tearing up of adhesions. Immediate recovery should not be expected after removal of the tubes for pyosalpinx.

Treatment of Complete Procidentia Uteri by Alexander's Operations.—Dr. C. C. Lee read a paper with this title. [It will be published in a future number of this Journal.]

The Management of Pelvic Inflammations in Women.—Dr. W. W. Potter, of Buffalo, read a paper on this subject, in which he called attention to the importance of minor pelvic inflammations, suggested a classification into simple pelvic inflammation or cellulitis, compound pelvic inflammation or cellulo-peritonitis, and complicated pelvic inflammation. He pointed out the influence of the relics of inflammation on the general health, the great value of support and pressure, and the employment of simpler measures before resorting to operations.

Vaginal Hysterectomy, with a Report of Eight Cases.—In a paper with this title Dr. W. M. Polk spoke of vaginal hysterectomy only for cancer. Dr. Sarah E. Post had collected 732 cases, all that had been reported, with a mortality of 24 per cent. The results now were much better; as to the after-results, she quoted Martin and Fritsch. She had described his method of operating.

Wednesday's Proceedings.

The Report of the Committee on By-laws favored receiving delegates from chartered medical institutions, and extending to members of county societies present, but not delegates, all privileges of members excepting that of voting. The report, with its recommendation, was adopted.

The Committee on the President's Address reported in favor of instructing the committee on legislation to urge the passage of the compromise medical examiner's bill; of referring the question of a medical expert to put questions to medical witnesses to the committee on legislation; of referring the matters of the custody of the insane and of quarantine to special committees; and of the appointment of a committee to prepare biographical sketches of deceased members. The report was adopted. Dr. Roosa's motion to allow one delegate each from the New York Polyclinic and the New York Post-graduate Medical School was carried.

Distinctions between Functional and Organic Disease of the Nervous System was the title of a paper by Dr. W. H. Thomson, of New York. He defined organic nervous disease as one accompanied by characteristic, invariably present, and recognizable organic change in nerve texture. True functional nervous disorders would have no community of origin, or be mixed, with organic nervous diseases. No organic nervous disease existed the symptoms of which were intermittent. Functional nervous diseases were invariably peripheric in origin. Nerve-centers were affected in these cases only secondarily by abnormal afferent impressions. In treatment, one should search for the point of afferent irritation.

The Dietetic Treatment of the Gouty Diathesis.—Dr. W. H. Draper, of New York, read a paper on this subject. There were many factors in the production of gouty diathesis, he said, relating to quantity as well as quality of food. It was a common belief that gout was due to excessive indulgence in animal food, yet he had found no class of people who had feebler power of converting carbohydrates. The author excluded from the diet of the gouty starches, sugars, wine, and beer, and recommended nitrogenous foods. Fruit was not borne well by the gouty.

Report of the Committee on Hygiene.—Dr. E. V. Stoddard, of Rochester, read the report. The efforts of the committee had been largely directed to organizing committees in the several county medical societies. Such committees should consist of not more than five and not fewer than three members. The committee suggested certain changes in the organization of local health boards and in the appointment of health officers, to reduce political influence and secure increased efficiency.

The Treatment of Gunshot Wounds of the Cranium.—Dr. Joseph D. Bryant, of New York, read a paper on this subject, and Dr. John H. Girdner, of New York, demonstrated the use of the induction balance and telephonic probe. As yet he had not been able with the induction balance to locate a ball in the brain situated more than an inch and a half from the surface. The telephonic probe was a perfect instrument, certain in its indications. The loudness of the sound varied in different individuals, but it was always distinct.

Extensive Compound Cranial Fracture; Considerable Loss of Brain Substance, complicated with Fungus Cerebri; Recovery.—Dr. A. Ross Matheson, of Brooklyn, read the history of a case, and presented the patient, a man who had sustained his injury in 1873, when eleven years old. He now had good health and a clear mind.

Fracture of the Skull with Depression.—Dr. Henry Flood read this paper. The cases in which fracture of the outer plate took place without injury of the inner plate were so few as not to deserve clinical consideration. The frontal sinus occupied a much smaller space than was generally supposed.

The Interdependence of Local, State, and National Health Boards; a Plea for their Unification, was the title of a paper by Dr. Charles Stover, of New York.

Special Committees were appointed by the president as follows: 1. To report on the treatment of the insane of the State, Dr. A. Jacobi, Dr. W. E. Ford, and Dr. C. R. Agnew. 2. To report on quarantine matters, Dr. Daniel Lewis, Dr. Charles Stover, and Dr. E. V. Stoddard. 3. To report on revising the pharmacopœia, Dr. F. A. Castle, Dr. Laurence Johnson, and Dr. E. V. Stoddard.

Pernicious Vomiting of Pregnancy.—Dr. A. S. Hickey, of Auburn, read the history of a case in which the patient's life was saved by rectal alimentation.

A Portable Storage Battery was exhibited by Dr. E. S. Jeffrey.

The Preservation of Dead Bodies.—Dr. A. Walter Suiter, of Herkimer, showed in this paper that important advances had not been made on older methods, and also the defects of the methods commonly employed by undertakers to-day, especially in a medico-legal aspect. Solutions of metals, particularly of arsenic, were commonly employed, and that would make it impossible to detect crime from poisoning with such agents. The author requested that this subject be referred to the Committee on Legislation, to consider the advisability of the passage of a law regulating the embalming process. The request was granted.

Discussion on Intestinal Obstruction.—Dr. Lewis A. Stimson, of New York, opened the discussion with a paper which will be published hereafter.

Statistics showing the results of all forms of treatment were needed, and he moved that a committee be appointed by the president to receive communications on this subject from members of county societies. Carried.

How Long should Cases be treated Medically?—Dr. W. C. Wey, of Elmira, said that, if Mr. Tait was justified in the remark that he would as soon open the abdomen as put his hand into his pocket, there should be no medical treatment at all in these cases. The diagnosis of intestinal obstruction was often not easy and sometimes impossible. The speaker recited a few cases in which the symptoms had pointed indubitably to intestinal obstruction, yet medicinal remedies had led to recovery. Medical treatment should be continued until such time as the symptoms pointed to serious danger of further delay if surgical procedures were not resorted to.

When should Operative Measures be resorted to?—Dr. Albert Van Derveer, of Albany, emphasized the necessity for the surgeon ever to be ready for these cases, and to operate early. Sudden intestinal obstruction was analogous to shock produced by traumatism. When an operation was decided upon there should be no procrastination, and the operation should be done with the greatest surgical skill. When at an autopsy a band was found constricting the intestine which nothing but opening the abdomen could have removed, it was poor consolation to the physician to say he had done all that medical measures could offer.

Dr. A. G. Gerster, of New York, in the informal discussion, showed the increased difficulty of diagnosis after the lapse of time. There would always be some difficulties surrounding the subject which could not be cleared up.

Dr. R. F. Weir, of New York, would advise the physician in a case of ordinary symptoms of obstruction, such as vomiting and persistent colicky pain, to pass the case over to a surgeon.

Dr. W. Gill Wylie, of New York, related some cases in which, besides pain and vomiting pointing to obstruction, there had been chills and symptoms pointing to a collection of pus, and, on doing laparotomy, he had found the obstruction to be due to a condition attended by the formation of pus. The patients recovered. He had refused in these cases to call a physician in consultation from fear that he would advise delay which might prove fatal.

The Choice of Operation.—Dr. Roswell Park, of Buffalo, considered more especially the choice between enterotomy and enterostomy. Enterostomy was to be performed when no idea could be formed of the situation of the obstruction, when a malignant element precluded the possibility of permanent benefit, and when the patient's powers had been undermined by the severity of the disease.

How should the Operation be Conducted?—Dr. Weir preferred chloroform as the anæsthetic. Rapidity of operation was the salvation of the patient. Free exposure of the abdominal contents should be secured. Gallstones obstructing the caliber of the gut had been broken up with a needle inserted through the intestinal coats, and had also been forced along to the colon by manipulations. Where invaginated gut could not be reduced it should be cut off, even if it sacrificed a considerable portion of the intestine. If an antiseptic was used in the peritoneal cavity, it should be salicylic acid. Very little opium was advisable, and very little nourishment should be given by the mouth after the operation. If symptoms of peritonitis developed, purgation should be employed. The rule should be to operate early.

The Results of Laparotomy for Acute Intestinal Obstruction.—Dr. B. Farquhar Curtis, of New York, showed in an analysis of 339 cases a mortality of 68 per cent. The very high death-rate was due to the bad condition of the patients, the operation having been too long delayed. The operation should also be as brief as possible. Enterostomy had given a death-rate nearly as great, and offered very little chance of cure.

Dr. Jacobi thought that every physician should be prepared to do the operation. Dr. Bacon, of Hartford, had recently relieved two patients with intestinal obstruction by injection of fluid into the bowel—cases in which some surgeons would have advised laparotomy.

Discussion on the Treatment of Tubercular Affections of Joints.—Dr. Gerster opened the discussion with a paper on *surgical treatment*. The cases were divided into those in adults and those in children. In the former, mechanical treatment was unsatisfactory; excision of the diseased part was called for. In children, good results usually attended the wearing of an apparatus. If abscess formed, puncture was preferable to incision. When children were operated upon, the surgeon should bear in mind the danger of causing arrest of growth in the limb. To prevent subsequent troublesome hæmorrhage he did not render the limb bloodless by the Esmarch bandage, but elevated the limb, and then applied one or two turns of the elastic constrictor. The after-treatment would depend upon whether motion was or was not desired. When motion was to be preserved, passive motion should not be made so long as much swelling and pain persisted.

The President's Address.—The president (Dr. Alfred L. Loomis, of New York) invited attention to the following problems: 1. The relation of microbes to disease processes. 2. Inoculation as a means of modifying or preventing disease. 3. The causes of abnormal temperature in disease. 4. The effects of antipyretics in the treatment of disease. By way of introduction, he stated briefly some of the methods of investigation employed in different ages, and compared them with methods of to-day. As to the first problem, might not microbes have the power of originating and controlling many of the morbific processes which took place in disease? It might be regarded as demonstrated that, when certain pathogenetic microbes had gained entrance into the body and reached localities which afforded certain conditions for their development, they multiplied and formed colonies, but what these conditions were had not been definitely determined. Were micro-organisms present in all morbid processes, could they originate *de novo*, and was there a mutability of the bacteria? Did microbes act as invariable and sole causes of disease, or were they the result of pathological processes instituted in their absence? The diseases in which it had been maintained that specified microbes had been discovered were enumerated. They might also exist in others. No reliable evidence had yet been presented to show that microbes originated spontaneously. The only diseases in which a bacterial origin had been completely demonstrated in man were erysipelas, splenic fever, and relapsing fever. As to the second problem, the fact that individuals who had once passed through certain infectious diseases, or a mitigated form of them, were afterward not susceptible to the infection of those diseases, might be regarded as strong evidence of the possibility of such immunity being obtained by inoculation with the attenuated virus. The diseases regarded as proved to be preventable by inoculation were small-pox, splenic fever, and perhaps hydrophobia. As to the third problem, we were driven back to the question of the nature of fever. Fever was something which we had not yet grasped. Chemical transformations produced definite results, whether occurring within the tissues or outside the body. The body took cognizance of the potential of food, and during certain changes, which were true combustions, a definite unalterable value was exhibited as kinetic energy in the form of heat.

Muscular action was an insignificant factor in the production of animal heat, except as it excited metabolic energy.

The varying circumstances of man's environment necessitated some heat-regulating mechanism.

The evidence of the existence of a regulating mechanism operating independently of chemical change was insufficient.

There appeared to be no reason for regarding the increased heat production of fever as requiring mechanisms other than those acting in the normal production of temperature.

The existence of two cerebral inhibiting heat mechanisms had been fairly established, and as much might be said of like spinal ganglia. The production of heat in fever was in exact consonance with metabolism. In the present state of our knowledge we could only theorize as to the character of the material in the circulating media, which initiated the primary irritation in febrile conditions. Regarding antipyretics, no one could contend that they had the power of shortening the duration or of greatly modifying the severity of infectious diseases.

Whether antipyretics acted by reducing heat production or by increasing heat dissipation was undetermined. The practical question was, if temperature reduction did not shorten the duration and mitigate the severity or avert serious complications in disease, and if the ratio of mortality was not diminished by antipyretic treatment, on what basis were we justified in their use? We removed one of the many phenomena of fever. If this could be accomplished without serious loss of vitality, or not at the expense of reserve force, we were justified in their use; but we should not imagine that by reducing the temperature we were controlling fever.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of January 25, 1888.

The President, Dr. J. Solis-Cohen, in the Chair.

Ichthyol in Surgery.—Dr. Edward Martin read the following paper: Ichthyol was first described by Schrötter, and used in the treatment of skin diseases by Unna. It is obtained as a clear yellow-brown oil by distilling bituminous matter found in the Tyrol and containing the fossil remains of fishes and marine animals. By the action of sulphuric acid on this distillate, and subsequent neutralization with soda or ammonia, either the sodium or ammonium sulphichthyolate is produced. The latter compound is preferred by Unna. The ammonium sulphichthyolate is a reddish-brown, clear, syrup-like liquid of burning taste and odor, soluble in water, making a clear red-brown solution; also soluble in equal parts of alcohol and ether. The ichthyol preparations are characterized chemically by their richness in sulphur (ten per cent.), so intimately united that it can only be extracted by complete decomposition (Lartigeau); they easily take up oxygen, acting as powerful reducing agents (Baumann).

Clinically, the ichthyolates are described by Unna as being powerful antiphlogistics, causing anæmia and rapid subsidence of swelling in all tissues. This antiphlogistic effect is ascribed to the drug's action on the endothelium of the blood-vessels, depriving it of oxygen in virtue of its reducing properties, and contracting the lumen of the vessels. This explanation is not, perhaps, entirely satisfactory, but physiological studies have not yet given us a better one. The cornifying effect of the drug on the epithelium of the rete is undoubted.

Surgically, what are the indications for the drug? Lartigeau states that it is indicated in all subcutaneous and inflammatory tumefactions, œdemas, vascular dilatations, incipient furuncles, and local manifestations of rheumatism. Elliot praises it highly in burns of the first and second degree (five-per-cent. solutions in water), as producing rapid subsidence of pain and inflammatory symptoms. He finds its application to obstinate varicose ulcers associated with eczema rubrum (sodium compounds, three to five per cent.) at times productive of marvelous results. In his hands it is also useful in cicatrices, and in a few cases of rheumatism and neuralgia has given immediate and marked relief from pain. Schweninger states that in rheumatism, lumbago, ischias, tic, gout, and migraine, local applications of ichthyol act more powerfully in allaying the pain than any known medication.

Lorenz is astonished at the fabulous efficacy of the drug. In acute and chronic joint rheumatism, acute muscular rheumatism, mastitis, panaritis, and contusions, a few rubbings with pure ichthyol or fifty-per-cent. ichthyol compounds are peculiarly successful in allaying pain and hastening healing. In chronic and acute joint rheumatism relief often follows a single rubbing, while this is the rule in acute muscular rheumatism. The pain of gout disappears, the shining red skin becoming quickly wrinkled. A beginning mastitis or panaritis is always aborted, or if fully developed the pain is much relieved. Its prompt use prevents the discoloration following contusions. It immediately allays the pain of a burn, and prevents blistering. Finally, a ten-per-cent. solution hastens the cicatrization of badly healing ulcers. Loring dilutes with water when the pure ichthyol compound can not be borne, and prevents irritation of the skin by careful washing and drying before each application.

Von Nussbaum states that a single application of ichthyol one part, water four parts, lanolin five parts, has allayed the itching of eczematous ulcers which had resisted all known applications for weeks and months, and promptly brought about rapid cicatrization on being continued a few days. Arthritic pains which for weeks have made day and night miserable are relieved at times in half a minute after the application of a strong ichthyol ointment. In erysipelas it produces results obtainable by no other means—namely, the immediate arrest of the disease. Von Nussbaum's treatment was first the thorough disinfection and drainage of the wound; then, if the disease continued to extend, over its whole surface a thick layer of ichthyolate and vaseline, equal parts, was spread and covered by a layer of ten-per-cent. salicylated cotton. The erysipelas advanced not a line farther, and in a single day the swelling disappeared, and the red, shining, puffy surface became yellow, brown, and wrinkled. This remarkable effect Von Nussbaum ascribes not to the influence of the drug on Fehleisen's cocci, but rather to a change produced in the tissues by virtue of which they cease to favor the growth of the micro-organisms.

Stelwagon has had excellent results in the abortion of furuncles by ichthyol preparations. Agnew (D. Hayes) considers the ichthyol preparations more powerful than any known therapeutical agent in bringing about reduction of inflammatory enlargements, and has had particularly good results in recently enlarged lymphatics. He uses sulphichthyolate of ammonium and iodide of lead, equal parts, applied generously and covered in by oiled silk.

The writer has used ichthyol in—(1) Six cases of cervical adenitis, with absolutely no relief, cure being subsequently brought about by iodine or the knife. (2) Fifteen cases of marked inflammatory induration of the subcutaneous tissues, with invariably a speedy and in some cases almost magical reduction, and this after other means had been tried unsuccessfully. (3) In two cases of furuncles without good effect. (4) In one case of cellulitis without marked effect till the knife was used (in this case staphylococci were found, but no chains). (5) In four cases where pain was the most marked feature of inflammation, with complete relief in three and no effect in the fourth. (6) In one case of erysipelas of the scalp, with immediate cure. This is not different from the results obtained by Nussbaum.

With the exception of the case of eysipelas, the writer used a ten-per-cent. ointment of ammonium ichthyolate in lanolin, fearing lest, in the case of stronger applications, the effects might be ascribed to counter-irritation. It is possible that stronger preparations would have proved efficacious in the treatment of adenitis in which the weak ointment signally failed.

The extravagant praises bestowed by some authors on ichthyol savor more of proprietary advertisements than scientific contributions, and the variety of affections for which it is recommended might well make one doubtful as to its complete efficacy in any single instance. An analysis of the cases in which it has proved serviceable will show, however, that they can be relegated to one of two classes: 1. Affections characterized by inflammatory enlargement. 2. Affections characterized by pain of peripheral origin, probably depending on inflammation or congestion. For either of these conditions, theoretically, a powerful antiphlogistic would be indicated, so that the clinical indications for the use of the drug correspond to its alleged therapeutic effect. When the surface is irritated, weak solutions (three to five per cent.) should be used; but when the skin is intact and the subcutaneous tissues are to be affected, pure or one-half-strength ointments give the best results. In using strong preparations the skin should be washed with soap and warm water, and thoroughly dried before each application. Ichthyolates can be combined with any of the ointments, or can be dissolved in water.

The writer's success with the drug, even where it was not used in the most efficient manner, has convinced him that the praise bestowed on it by the Germans is well merited. Where suppuration has actually taken place the weak ointment is not of service, but in the allaying of inflammatory pain and the resolution of subcutaneous induration (excepting adenitis) the results are most satisfactory.

Book Notices.

Text-book of Therapeutics and Materia Medica, intended for the Use of Students and Practitioners. By ROBERT T. EDES, A. B., M. D., formerly Professor of Materia Medica and Jackson Professor of Clinical Medicine in Harvard University, etc. Philadelphia: Lea Brothers & Co., 1887. Pp. xi–17 to 552. [Price, $3.50.]

THE author of this book is already favorably known by his "Therapeutic Handbook of the United States Pharmacopœia," and the present work seems destined to take a prominent place as a text-book on the subjects of which it treats. It possesses all the essentials which we expect in a book of the kind, such as conciseness, clearness, a judicious classification, and a reasonable degree of dogmatism. The style deserves the highest commendation for its dignity and purity of diction—features which are not very commonly met with in these days of rapid bookmaking.

The student and young practitioner need a safe guide in this branch of medicine, which more than any other is inclined to run to opposite extremes. Such they can find in the present author, who evidently has learned to travel along the much-recommended *via media*, which in reality has so few travelers. The simple but forcible truth conveyed in his sentence in the introduction, that "it is quite of as much importance to realize what drugs can not do as what they can," can not be too much emphasized. It is one which the author seems to have had constantly in view, and which will enhance his book for the purpose of ready reference. The drugs are classified according to their actions, and when a drug has several properties it receives full treatment under one classification, and reference is made to the other sections in which it is mentioned. All the newest drugs that promise to have more than a fleeting reputation are treated of in the work.

Where there is so much that is praiseworthy we dislike finding any fault, but are induced to pick out the flaws by the author's frank statement that he will cordially welcome candid criticism. We think that fuller instructions regarding doses might be advisable in some instances.

The remarks on the "uses of cathartics" are extremely practical and to the point. It is not quite clear to us why oxalate of cerium should appear under the caption of "Protectives and Vehicles," seeing that it is recommended only in the vomiting of pregnancy. Nothing is said of phosphorus as a remedy in rickets—an omission which is not intelligible in view of what has been written on the subject within the past few years. One more criticism and we have done. It would, in our mind, have materially increased the value of the work as a text-book if the more important antagonists, incompatibles, and synergists of each drug had been mentioned. The clinical index at the end will be found very useful. We heartily commend the book and congratulate the author on having produced so good a one.

BOOKS AND PAMPHLETS RECEIVED.

The Intestinal Diseases of Infancy and Childhood. Physiology, Hygiene, Pathology, and Therapeutics. By A. Jacobi, M. D., President of the New York Academy of Medicine, etc. Detroit: George S. Davis, 1887. Pp. xv–301. [Physicians' Leisure Library, No. 5, 1887. Price, 25 cents.]

Similia Similibus Curantur? Addressed to the Medical Profession. By Charles S. Mack, M. D. Boston and Providence: Otis Clapp & Son, 1888. Pp. 31. [Price, 40 cents.]

Transactions of the Medical Society of the State of New York for the Year 1887. Published by the Society.

The Structure of White Thrombi. By W. H. Welch, M. D., Professor of Pathology in Johns Hopkins University, Baltimore, etc. [Reprinted from the "Transactions of the Pathological Society of Philadelphia."]

Shakespeare and the Medical Sciences. The Presidential Address, delivered on October 12, 1887, at the opening of the Fourteenth Session of the Bristol Medico-chirurgical Society. By L. M. Griffith, M. R. C. S. Eng., etc. [Reprinted from the "Bristol Medico-chirurgical Journal."]

An Address from a Special Committee of the College of Physicians of Philadelphia to the Medical Societies of the United States; concerning the Dangers to which the Country is Exposed by the Ineffectual Methods of Quarantine at its Ports, and in regard to the Necessity of National Control of Maritime Quarantine. To which is appended the Report of the Committee of the College of Physicians of Philadelphia appointed to Investigate the Efficiency of our Quarantine Arrangements for the Exclusion of Cholera and other Epidemic Diseases.

The Galvano-cautery Sound and its Application, especially in Hypertrophy of the Prostate, with Reports of Cases. By Robert Newman, M. D., of New York. [Reprinted from the "New England Medical Monthly."]

A New Point in the Diagnosis of Graves's Disease. By R. Norris Wolfenden, M. D., etc. [Reprinted from the "Practitioner."]

Miscellany.

The Health of Boston.—During the week ending Saturday, February 11th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 23 cases and 7 deaths; scarlet fever, 22 cases and 3 deaths; typhoid fever, 12 cases and 2 deaths; measles, 21 cases. There were also 29 deaths from consumption, 38 from pneumonia, 3 from whooping-cough, 14 from heart disease, 6 from bronchitis, and 5 from marasmus. The total number of deaths was 213, against 162 in the corresponding week last year.

The Health of Michigan.—It appears by the State Board of Health's summary of returns for the four weeks ending January 8th that during that period diphtheria was reported from fifty-seven places, scarlet fever from fifty-four, typhoid fever from thirty-nine, measles from twenty, and small-pox from one.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending February 10th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending January 21st corresponded to an annual rate of 23 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 17, and the highest in Portsmouth, viz., 28·8 in a thousand. Small-pox caused 25 deaths in Sheffield, 3 in Bristol, and 2 in Nottingham.

London.—Two thousand deaths were registered during the week ending January 21st, including 14 from measles; scarlet fever, 42; diphtheria, 22; whooping-cough, 138; enteric fever, 26; and diarrhœa and dysentery, 15. Diseases of the respiratory organs caused 591 deaths; different forms of violence, 78; and 10 suicides were registered. The deaths from all causes corresponded to an annual rate of 24·4 in a thousand. In greater London 2,512 deaths were registered, corresponding to an annual rate of 23·7 in a thousand of the population. In the "outer ring" 11 deaths from diphtheria; measles, 8; and whooping-cough, 39, were registered.

Ireland.—The average annual death rate represented by the deaths registered during the week ending January 21st in the sixteen principal town districts of Ireland was 31·4 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 10·3, and the highest in Sligo, viz., 72·2 in a thousand. In Dublin 216 deaths were registered, including 2 from measles; whooping-cough, 5; diphtheria, 3; scarlet fever, 7; typhus, 1; enteric fever, 6; diarrhœa, 3; and dysentery, 1.

Scotland.—The deaths registered in eight principal towns during the week ending January 21st corresponded to an annual rate of 23·3 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 17·5, and the highest in Dundee, viz., 26·5 in a thousand. The aggregate number of deaths registered from all causes was 588, including 15 from measles; diphtheria, 5; scarlet fever, 3; whooping-cough, 24; fever, 6; and diarrhœa, 13.

Lima.—The United States minister states, under date of January 5, 1888, "that on the 2d day of January the Sanitary Congress met under the auspices of the Minister of Foreign Relations, and was officially installed, there being present, for Peru, Dr. Francisco Rosas, Dr. José Mariano Maceao, Dr. Lino Alarco; for Ecuador, Dr. Celso Bambarén; for Bolivia, Dr. Julio Rodriguez and Dr. Andrés S. Muñoz. Secretary, Dr. Picardo Pimentel, of Ecuador." The minister also transmits a translation of a cutting from "El Comercio," Lima, January 4, relative to the cholera in Valparaiso, as follows:

"CHOLERA.—Though we have no official telegram upon the state of the epidemic in Chili, we know of a telegraphic dispatch received by private persons from Valparaiso stating that *the flail* is making many victims, and has reached up to 130 cases daily, deaths being from 80 to 90."

Buenos Ayres.—One thousand two hundred and thirty-six deaths were registered during the month of November, 1887, including 99 from small-pox; enteric fever, 23; scarlet fever, 2; and diphtheria, 62.

Montevideo.—Three hundred and sixty-eight deaths were registered during the month of November, 1887, including 29 from small-pox and 6 from enteric fever.

Merida.—The United States consul reports that pellagra is prevalent among the Indians, and that 9 deaths from that disease occurred during the week ended January 23, 1888.

Santiago de Cuba.—The sanitary inspector reports for the week ending January 28, 1888, that "no contagious diseases have appeared this week, excepting one case of yellow fever, ... ending fatally at the military hospital. No small-pox cases have been reported, and the sanitary condition of both the city and port is excellent."

Havana.—Seven hundred and sixty-five deaths were registered during the month of January, 1888, including 9 from yellow fever; small-pox, 269; enteric fever, 12; diphtheria, 7; scarlet fever, 1; hydrophobia, 1; so-called pernicious fever, 11.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	January 21.	2.260,045	1,167	..	....	6	....	37	4	39
Glasgow	January 21.	526,088	235	..	....	....	....	2	1	3
Warsaw	January 7.	439,174	249	..	....	11	....	....	9	3
Warsaw	January 14.	439,174	219	.	...	5	.. .	....	3	3
Rome	December 10.	373,356	173	..	...	9	....	2	....	3
Rome	December 17.	373,356	170	..	....	4	....	1	1	1
Rome	December 24.	373,356	217	..	....	5	....	3	....	3
Copenhagen	January 10.	300,000	152	..	....	...	....	1	....	4
Munich	January 14.	275,000	146	..	....	....	....	....	1	5
Edinburgh	January 21.	262,733	120	..	....	....	...	2	1	1
Palermo	January 22.	250,000	143	..	....	....	....	....	2	5
Bristol	January 14.	225,510	105	..	....	....	...	1	5	. ..
Belfast	January 21.	221,422	151	..	..	....	....	4	2	....
Toronto	January 28.	130,000	24	..	....	...	....	....	....	6
Stuttgart	January 21.	125,510	42	..	....	....	1	....	....	....
Bremen	January 14.	122,000	46	..	....	....	....	....	....	2
Barmen	January 14.	109,000	56	..	....	....	...	....	....	1
Leith	January 21.	74,320	25	..	....	....	....	...	....	1
Mayence	January 14.	65,701	39	..	....	....	1	....	....	1
Cienfuegos	January 23.	35,464	30	..	....	20	....	1	...	....
Guayaquil	January 7.	30,000	72	..	8	22	....	16	....	....
Gnayaquil	January 14.	30,000	64	..	2	18	....	21	....	....
Sagua	January 14.	15,605	8	..	....	3	....	....	....	....
Sagua	January 21.	15,605	11	..	....	5	. .	....	....	....

The New York State Medical Association.—The next meeting of the Fifth District Branch will be the fourth annual meeting, to be held in Brooklyn, on Tuesday, May 22d. There will be a morning and an afternoon session. All Fellows are solicited to contribute to the meeting, either by reading papers, notes, or communications, or by exhibiting specimens. All papers offered are the property of the branch, and will be published in a current medical journal. The secretary, Dr. E. H. Squibb, P. O. Box 94, Brooklyn, desires to be notified of the title of any paper to be offered as early as convenient.

The Long Island College Hospital.—The commencement exercises of this institution will be held at the Academy of Music, Brooklyn, on Friday, March 9th, at 8 P. M. The Rev. T. De Witt Talmage, D. D., will deliver the address to the graduates, and the valedictory will be given by Dr. George W. White. Professor A. Jacobi will address the Association of the Alumni of the college on Monday, February 27th, at 8 P. M., at the college building. The subject of his address will be "The Heart and Blood-vessels of the Young." On Wednesday, March 7th, at 3 P. M., the association will hold its annual meeting, at the college building. After the transaction of the regular business, the association will listen to the reading of the prize essay. The annual dinner of the association will take place on Thursday, March 8th, at 7 P. M., at Remsen Hall.

THERAPEUTICAL NOTES.

Mixtures for the Treatment of Rheumatism.—Dr. J. M. Chaplin of Bowling Green, Ohio, writes to us recommending the following formulæ:

1. *For acute rheumatism.*

Salicylic acid (from oil of wintergreen)	4 drachms;
Sodium bicarbonate	5 "
Peppermint water	4 ounces;
Potassium citrate	2 drachms;
Wine of colchicum seed	4 "
Syrup	to 8 ounces.

Half a tablespoonful to be given every three or four hours.

2. *For subacute rheumatism.*

Potassium citrate	1 drachm;
Essence of lemon	3 drachms;
Syrup	2 ounces;
Tincture of chloride of iron	3 drachms;
Water	to 4 ounces.

A teaspoonful, diluted with water, to be given every four hours.

When malarial poisoning is suspected, Dr. Chaplin adds about half a drachm of liquor potassii arsenitis to either mixture.

An Idiosyncrasy with regard to Antipyrine.—Dr. W. A. Sturge writes as follows in the "British Medical Journal" for February 4th: "A member of my family liable to migraine was attacked in the ordinary way a few days ago, and I administered for the first time a dose of five grains of antipyrine in powder, with the following curious result: Five minutes after taking it, the 'deadly sickness' which was previously present seemed to give way, and an 'expanding sensation' was felt, rising from the stomach upward. Almost immediately she sneezed violently for about twenty times running without pause. The face and eyes became deeply suffused; tears began to flow; quantities of mucus flowed from the nose; the breathing became hard and labored, accompanied by a feeling of suffocation; there was complete inability to lie down. A violent cough slowly came on, and large quantities of mucus were expectorated; at the same time there was very profuse sweating. After these phenomena had lasted for about half an hour, intense itching was felt on the insides of both thighs, and on examination there was found a thick outcrop of urticaria, which soon extended on to the abdomen. There was also a strong coppery taste in the mouth—not continuing, but coming on in violent bouts—and an equally strong smell of the same metallic nature, also intermittent. There was loud singing in the ears, which felt intensely congested. The pulse was quick and very full. After the symptoms had lasted about three quarters of an hour from the commencement, they gradually disappeared, some tightness of the chest and running at the nose remaining for four or five hours longer. The sickness accompanying the migraine disappeared completely as soon as the drug had begun to work; the headache also disappeared for a time, but came back slightly about four hours afterward."

An Ointment of Cocaine.—The "Revue générale de clinique et de thérapeutique" quotes Lustgarten as recommending the following formula for an ointment to be used for anal and vulvar pruritus and the pains of herpes zoster:

Oleate of cocaine	0·4 to 1	part;
Lanolin	18	parts;
Olive-oil	2	"

A Dangerous Mixture, according to Mr. R. H. Parker ("Brit. Med. Jour.," Jan. 21, 1888), is that of potassium chlorate with syrup of iodide of iron. He remarks that a case of death from its administration has lately been reported from Australia. The danger lies in the liberation of iodine, and, as heat favors the reaction, it is added that the process, which might be slow in the medicine bottle, would be much more rapid in the stomach.

The Removal of Warts by the Internal Use of Arsenic.—Mr. B. G. Pullin, of Sidmouth ("Bristol Med.-chir. Jour.," Dec., 1887), gives the histories of a number of cases in which he has cured warts on the hands by the use of small doses of arsenic, from one to three minims of Fowler's solution twice a day. He states that in every instance the cure has been complete and rapid.

A Russian Ointment for Frostbite.—Under the name of *russische Frostsalbe*, the "Internationale klinische Rundschau" gives the following formula, taken from the "Pharmaceutische Post":

Bone-marrow	40	parts;
Hydrochloric acid	30	"
Ointment of althæa	120	"
Extract of opium	2½	"
Camphor	10	"
Venice turpentine	20	"

The process of making the ointment is not given.

Camphor and Charcoal as an Application to Ulcers.—M. Egasse states in "Nouveaux remèdes" (without mentioning the source of his information) that Barbocci recommends a mixture of equal parts of camphor and animal charcoal as a cleansing and anodyne application to deep chronic ulcers.

The New York Academy of Medicine.—At the next meeting of the Section in Ophthalmology and Otology, Monday evening, the 20th inst., Dr. Herman Knapp will read a paper entitled "Removal of an Orbital Exostosis," and Dr. W. O. Moore will read a paper on "Diabetic Affections of the Eye."

At the next meeting of the Section in Theory and Practice of Medicine, Tuesday evening, the 21st inst., Dr. H. M. Biggs will read a paper entitled "Some Observations on Aortic Aneurysm, with a Report of Thirty-three Cases with Autopsies."

At the next meeting of the Section in Pædiatrics, Wednesday evening, the 22d inst., Dr. A. Caillé will read a paper entitled "Prolapse of the Inverted Lower Portion of the Right Ureter through the Urethra in a Female Child two weeks old," and give a demonstration of utensils for preparing and administering sterilized milk; Dr. G. H. Fox will read a paper on "The Ætiology and Treatment of Infantile Eczema"; and Dr. E. C. Wendt will read a paper on "Some Recent Views regarding the Pathology and Treatment of Pertussis."

At the next meeting of the Section in Obstetrics and Gynæcology, Thursday evening, the 23d inst., Dr. H. J. Garrigues will read a "Report of Cases of Laparotomy for Ruptured Uterus."

At the next meeting of the Section in Materia Medica and Therapeutics, Friday evening, the 24th inst., Dr. L. D. Bulkley will read a paper entitled "On the Value of frequently repeated Doses of Arsenic in the Treatment of Bullous Diseases of the Skin, especially in Children."

At the next meeting of the Section in Laryngology and Rhinology, Tuesday evening, the 28th inst., Dr. F. H. Hooper, of Boston, will read a paper on "Adenoid Vegetations in Children, their Diagnosis and Treatment"; and Dr. C. J. Blake, of Boston, will speak of the relation of such growths to disease of the middle ear. Dr. Beverley Robinson, Dr. F. H. Bosworth, Dr. R. P. Lincoln, Dr. D. B. Delavan, Dr. Gorham Bacon, Dr. Samuel Sexton, Dr. C. C. Rice, Dr. D. B. St. J. Roosa, and Dr. H. D. Noyes are announced to take part in the discussion. A novel feature of the programme is entitled "presentation of questions," and it is stated that "These will be welcomed from any source, and may be sent by mail or handed in at the meetings."

ANSWERS TO CORRESPONDENTS.

No. 145.—According to Retzius, in the brachycephalous races of man the ratio of the transverse to the antero-posterior diameter of the skull is as 7 to 8, while in the dolichocephalous races it is as 7 to 9.

No. 146.—The International Medical Congress met in London in 1881.

No. 147.—While there is no particular "demand" for American physicians in South America, those who are well educated are, we believe, always welcome. The Argentine Republic is a very progressive country, and an American would probably feel more contented there than in most other South American countries. Medical fees there are much the same as in the United States. Every applicant for a license to practice is required to pass an examination before the faculty of the School of Medicine, which is under the control of the Government. The examinations have special reference to the applicants' knowledge of the climatology of the country and of the characteristics of disease peculiar to it.

No. 148.—He is still a member.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

AN ACCOUNT OF A CASE IN WHICH RECOVERY TOOK PLACE AFTER LAPAROTOMY HAD BEEN PERFORMED FOR SEPTIC PERITONITIS DUE TO A PERFORATION OF THE VERMIFORM APPENDIX.

*WITH REMARKS UPON THIS AND ALLIED DISEASES.**

By HENRY B. SANDS, M. D.,

PROFESSOR OF THE PRACTICE OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK; ATTENDING SURGEON TO THE ROOSEVELT HOSPITAL.

On the morning of Friday, December 30, 1887, I received a note from my friend, Dr. Simon Baruch, of this city, requesting me to meet him in consultation without delay. We met at noon, when I received the following account, which is here reproduced in Dr. Baruch's own words:

"I visited G. W. at 8 A. M. on the 29th of December. He stated that he had been suffering pain in the lower abdominal region since the previous afternoon, but that during the night the pain had grown worse, and that he had vomited several times. His mother regarded it as an attack of acute indigestion. I found the right iliac region exquisitely tender to the touch, but the other portion of the abdomen, especially the left iliac region, only tender on deep pressure. Slight tympanites. Has not vomited since 4 A. M. Pulse, 120; respiration, 36; temperature, 102·4°.

"*Diagnosis.*—Perityphlitis, and I gave the mother an unfavorable prognosis. Turpentine enema was ordered, and all food and drink withheld. Poultice to lower part of abdomen. Teaspoonful of U. S. P. solution of morphine every two hours if necessary for pain. At 1 P. M., pulse, 120; respiration, 30; temperature, 101·4. Has not required anodyne, pain being entirely relieved by poultice and emptying of lower bowel; ordered small quantities of beef-tea. At 8 P. M., temperature, 101·4°; pulse, 116; respiration, 30; comfortable.

"*December 30th.*—8 A. M., temperature, 101·6°; pulse, 130; respiration, 30. Has taken five ounces of beef-tea and two ounces and a half of milk, as there was neither nausea nor vomiting. Local tenderness not lessened, tympanites increased. Decided dullness on percussion over iliac region. Although there had been no pain, no vomiting, and patient expressed himself as decidedly more comfortable, the continuance of exquisite tenderness, together with the dullness over right iliac region, the increase of tympanites and pulse-rate, and the example of three previous fatal cases, induced me to believe that the time for action had arrived. I told the mother that as a surgical operation of serious nature might become necessary, I would like to have Dr. Sands to see patient at the earliest possible moment."

At the time of our first consultation the boy was quite ill with what was believed to be peritonitis. Pulse, 130; temperature, 101·6° F.; respiration, 32. Abdomen moderately distended and painful, the pain being most marked in the right iliac region, which was also exquisitely sensitive and slightly dull on percussion. Careful examination of this region failed to discover any tumor, nor could any swelling be felt when the forefinger was introduced into the rectum.

I diagnosticated the case as one of acute septic peritonitis, caused by perforation of the vermiform appendix, and advised an immediate resort to laparotomy. Dr. Baruch replied that, while he fully approved of my proposal, the family would be unwilling to consent to so serious an operation without further counsel, and it was accordingly agreed to make every necessary preparation for the procedure, and to ask Dr. Lange and Dr. Bull to meet us in consultation at half-past three o'clock in the afternoon. Dr. Lange failed to come, but Dr. Bull saw the patient, and agreed with me as to the propriety of surgical intervention. He recommended at first an oblique incision above Poupart's ligament, such as is commonly made in opening perityphlitic abscesses. He felt inclined to evacuate the matter, if practicable, without laying open the general peritoneal cavity, which he said could be entered later, if necessary, by extending the incision, as he had recently done in a similar case. But I felt confident that the patient was suffering from septic perforative peritonitis, and that laparotomy would afford the only chance of cure; I therefore expressed my preference for opening the peritoneal cavity directly by means of a vertical incision through the abdominal wall, situated over the caput coli, because this would give easy access to the diseased parts, and allow more thorough work. Dr. Bull, after consideration, said that if I had made up my mind to perform laparotomy, the plan I had suggested would, he thought, be the best. Dr. Baruch also coincided with my proposal. At four o'clock in the afternoon, about forty-eight hours after the onset of the attack, with the assistance of Dr. Baruch and Dr. Hartley, and my pupil, Mr. Wiggins, I operated in the following manner:

Ether; vertical incision, four inches long, beginning at a point half an inch above and to the outer side of the middle of Poupart's ligament, and ending about the same distance below the level of the umbilicus. Incision afterward prolonged at its lower end three quarters of an inch inward parallel with Poupart's ligament. When the skin had been divided, the connective tissue was found œdematous, a fact which showed the intensity of the existing inflammation, and afforded a partial explanation of the dullness which had been noticed on percussion. The deeper layers, however, had a more natural appearance until the peritonæum was reached. This was thickened and opaque, and bulged into the wound like a piece of intestine. A hypodermic syringe inserted into it drew matter, whereupon the peritoneal cavity was laid open by a free incision. When a little air and about an ounce of fœtid pus had escaped, the diseased parts could be readily inspected. The parietal peritonæum, and that covering the commencement of the large and the adjacent coils of the small intestine, were covered with pus and recent lymph. The peritonitis was not general, but there were no limiting adhesions between the intestinal convolutions, which separated spontaneously from one another and rolled out through the wound. The inflammation was evidently recent, spreading, and severe. When the iliac fossa was examined, a nearly spherical fæcal concretion, about a quarter of an inch in diameter, was found lying free in the peritoneal cavity, just below the cæcum. A similar concretion had partly escaped from an opening seen at the base or commencement of the vermiform appendix, the remainder of which, not gangrenous, lay upon the back part of the cæcum. The length of the appendix was about an inch and a half. When the fæcal concretion just referred to had been picked out with a forceps, another one escaped in a similar manner from the opening in the appendix, the margins of which were not gangrenous.* These were very slightly trimmed off with scissors, and then brought together with three interrupted silk sutures, both ends of each suture being cut off close to the knot. As the coats of the intestine were thick and rigid at the seat of perforation, and the serous membrane was covered with inflammatory exudation, I did not attempt to employ Lembert's suture, but united the edges by means of threads passed through the entire thickness of the gut. The diseased parts were next irrigated with warm water (at about 105° F.), and afterward syringed out with half a pint of a solution of mercuric bichloride, 1 to 1,000. Upper part of wound closed for an inch and a half by the silver sutures, embracing all the layers of the abdominal wall; the remainder lightly dusted with iodoform, and packed with iodoform gauze (50 per cent.), a piece of which was inserted between the parts sutured above and the coils of the small intestine, which were covered with lymph, and inclined to protrude. A few layers of moist bichloride gauze, a pad of borated cotton, and a gauze bandage completed the dressing, which was left undisturbed for two days.

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* Read before the New York Surgical Society, February 8, 1888.

* One of the concretions was saved and examined by Dr. Hartley, who found it to consist of ordinary fæcal matter containing what appeared to be disintegrated fruit-seeds.

Immediate improvement followed the operation, the temperature fell to 98·5° within an hour, and no unfavorable symptoms occurred to interrupt convalescence. The pulse and temperature fell within a few hours to almost the normal standard, and the pain and vomiting disappeared. The iodoform gauze was all removed by the fifth day, but the dressings were renewed daily for three weeks, after which they were changed less often. The temperature rose on two occasions to 100°; at other times it was below 99°. The bowels were cleared out by a laxative on the eighth day, and afterward acted regularly. The sutured intestine remained closed, and the large wound, which scarcely suppurated at all, is now nearly healed, and there seems to be no tendency to hernia. The patient is shown to the society at the present meeting, because he is about to leave New York for his home in North Carolina.

As the members are aware, laparotomy for peritonitis due to non-traumatic perforation of the stomach or intestine is a modern operation, the first one having been done by Mikulicz, who performed the operation in 1880,* and reported it in 1885. Weir, in 1887,† was able to collect only fifteen cases in which the operation had been performed for perforative lesions of the intestine not due to traumatic causes. More recently I have known or read of similar cases, but, as my present communication is not intended to be statistical, I do not report them. It may be well to state, however, that out of nine of the fifteen cases reported by Weir the vermiform appendix was the seat of either perforation or gangrene, and of these, in four instances the disease of the appendix was not found until after death. A case is also reported in which there existed a perforation of the cæcum. This was also unrecognized during life. In the remaining five cases the diseased appendix was found and removed at the time of operation. All the patients died except Hall's,‡ in whom, during an operation for a supposed strangulated hernia, the hernial sac was found to contain an appendix vermiformis which was the seat of a perforation caused by tubercular disease. The appendix was tied and cut off, the peritoneal cavity was exposed freely by extending the incision upward, and then thoroughly cleansed. The wound was drained by a rubber tube and filled with iodoform gauze, and the patient recovered. Hall's management of this case was judicious and skillful, and he certainly rescued his patient's life. But his discovery of the perforated appendix was accidental, and I am acquainted with no case like mine in which a perforative peritonitis, due to disease of the appendix, has been diagnosticated, and treated by laparotomy with a favorable result.

I avail myself of the present opportunity to discuss the surgical treatment of certain inflammatory affections originating in the right iliac fossa—namely, those which proceed from disease of the cæcum or its appendix. The subject is one of growing importance, and the surgical treatment of the diseases mentioned has been greatly improved in recent times. Nevertheless, there are some current notions concerning their morbid anatomy and treatment which appear to me to be erroneous, and which I am anxious to correct. My studies in this direction began early, and antedate the time when Parker performed his well-known operation for perityphlitis in 1866. Before this was done I made, at his request, a number of dissections in order to ascertain how the cæcum and appendix could be approached with the least danger of wounding the peritonæum, and found, as would naturally be imagined, that these parts could be most safely reached by raising the peritoneal bag from the iliac fascia, as is usually done before tying the iliac arteries. But, for reasons I shall presently give, this plan was not adopted by him in his operations. In common with other surgeons, I have for many years past followed the method which he recommended, and have had reason to be satisfied with it when endeavoring to open perityphlitic abscesses at the usual period, when they have reached a certain size and position. But if very early operations—that is to say, within the first two or three days—are undertaken, I should think it would be preferable to proceed in the manner I have above mentioned, which I will try later to describe.

In 1880* I published an article on perityphlitis which gave the views I then entertained respecting that disease, and which contained an account of twenty-six cases I had either treated myself or had seen in consultation. Since that time my experience in this class of affections has been much larger than before, but how large I am unable to say, for I have been busy, and have neglected to keep a record of what I have observed. I regret this more especially because I have always found my own experience to be far more serviceable to me than that of others. I do not mean that it is of greater value intrinsically, but it is more valuable to me as a means of arriving at the truth. I freely admit the importance of statistics when accurately compiled, but I have so often found them misleading, if not absurd, that I am apt to regard them with suspicion. They are too often gathered by persons who have had only a very limited personal experience in the subject about which they write, and who fall into the easy error of putting under the same heading things so essentially different from one another that they are entirely unfit for purposes of comparison. Their numbers seem tempting, and not infrequently deceive both the author and the reader; but the conclusions reached, though at first sight convincing, are ascertained, when the statistics are carefully examined, to have a foundation which is insecure. Although, for the reasons I have given, I have no figures to present, having none of my own and not feeling competent to deal with the figures of others, I venture to express some views which I have been led to adopt after considerable study and experience, and which I believe to be in accordance with our present state of knowledge concerning a topic which is still involved in some obscurity.

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* "Sammlung klinischer Vorträge," No. 262.

† "Med. Record," xxxi, 652.

‡ "N. Y. Med. Jour.," vol. xliii, p. 662.

* "Notes on Perityphlitis," "Annals of the Anat. and Surg. Soc.," Brooklyn, vol. ii, p. 249.

In speaking of inflammatory affections occupying the iliac fossa, I desire to restrict my remarks to those morbid conditions which are dependent on disease of the cæcum or its appendix. Those who desire to obtain information of a more general character would do well to read an admirable essay entitled "Iliac Phlegmons," written by Matas, and published in the "New Orleans Medical and Surgical Journal" for 1886. Unfortunately, inflammatory diseases originating in the cæcum or the vermiform appendix are both common and dangerous. Furthermore, it has been well established that perforations of the cæcum are extremely rare as compared with those of the appendix.

I shall use the word perityphlitis in its broader sense, including under that designation all inflammatory processes starting from the cæcum or vermiform appendix which lead to the development of a circumscribed tumor. Cases in which ulceration or gangrene causes a slowly spreading septic peritonitis, as well as those in which acute peritonitis is set up by the direct entrance of fæces into the peritoneal cavity, belong to a separate category, and should be considered by themselves. Indeed, the latter are described by most writers as constituting a distinct class, and are termed cases of perforative peritonitis. The words typhlitis, paratyphlitis, and perityphlitis (when the latter is employed, as recommended by Virchow, to denote an inflammation of the serous membrane covering the cæcum) have, perhaps, an etymological and pathological importance, but I have never found them to possess much clinical value, and have therefore ceased to employ them. In practice I have learned to distinguish four varieties of allied disorders, which I will now endeavor to describe.

First, there is a kind of perityphlitis which is characterized by the fact that the inflammatory tumor disappears by resolution. Pain in the abdomen, usually most marked on the right side, the presence of a tender, deep-seated lump in the right iliac fossa, fever, and sometimes nausea and vomiting, are the common symptoms. The tumor may become large, and may perhaps be felt through the rectum. Sometimes the tumor extends downward into the true pelvis, at other times it is situated considerably above Poupart's ligament; sometimes it lies in the track of the cæcum, at other times to the inner or outer side of it; its usual situation corresponds with that of the cæcum itself, which is generally resonant on percussion, and can be appreciated as lying in front of it. In rare cases the tumor can be made out to actually involve the cæcum, when the resonance just mentioned is occasionally absent. Cases thus characterized by their termination in resolution often present mild symptoms, but the latter are frequently acute, especially during the first few days after the onset. Under suitable treatment the disease generally disappears after the lapse of a week, but now and then resolution is much longer delayed. I have recorded a case in which such a tumor persisted for a period of five months, and then subsided apparently by resolution.

Respecting the pathology of this class of cases we are obliged for the most part to speculate, because, unless the patient dies from some other cause during the course of the malady, we can learn little or nothing about it by examination post mortem. Nevertheless, our speculations may not be unprofitable, as there are some well-established facts to guide us.

It will, perhaps, be useful to consider first those rare examples of the disease in which perityphlitis is due to fæcal impaction, or to the presence of foreign bodies, or of irritating substances in the caput coli. Generally an accumulation of fæces in the cæcum gives rise to no inflammatory action, as every surgeon knows who has seen many persons suffering from chronic stricture of the rectum or colon. Often in these instances both the large and the small intestine may be distended with fæces without causing any but mechanical symptoms due to pressure. Simple fæcal impaction of the cæcum has been so extremely rare in my experience that for a long time I made the mistake of doubting its existence. It may be sometimes diagnosticated by the doughy resistance of the tumor, and by the absence of the resonance usually present in the early stage of the other varieties of perityphlitis, or by the persistence of a tumor after the inflammatory symptoms have subsided. For this condition, as well as for the morbid state in which irritating matters of whatever nature reside in the cæcum, a cathartic is said to be the proper remedy, and this is perhaps true. But, when the diagnosis is at all doubtful, I believe it is a better plan to defer the administration of laxatives until the inflammation has subsided under the use of opium and local applications. This will probably happen if the disease is owing to impaction, while, as we all know, mischief often results from giving cathartics when no real impaction exists.

But, as I have stated, inflammatory tumors of the class referred to are seldom due to fæcal impaction of the cæcum, and some other cause must be invoked to explain their formation. And here I am inclined to view the appendix, rather than the cæcum itself, as the source of the trouble. We know that the appendix is far more commonly diseased than was formerly believed, and Toft declares that this organ is found to be unhealthy in thirty-six per cent. of all persons examined after death. A strong argument in favor of the frequent origin of mild cases of perityphlitis in the appendix is afforded by the familiar instances in which the disease is several times repeated at intervals of months or years and finally excites an abscess, from which one or more fæcal concretions, evidently derived from the appendix, are discharged. Such cases must have been seen by nearly every surgeon, and one can not avoid the conclusion that the successive attacks are identical in origin, and have all been caused by the irritation of one or more concretions in the appendix, which, having set up repeated mild processes of inflammation, at last gave rise to suppuration. Such an explanation would appear to be more rational than the view which has been advanced that cæcal irritations cause non-suppurative inflammations, while diseases of the appendix cause abscess.

Another circumstance indicating the frequent origin of this variety of perityphlitis in the appendix is the locality of the inflammatory tumor. As has been observed, this is usually situated behind the cæcum, but it varies considerably in position, being sometimes below this division of the intestine, even within the pelvic cavity, and at other times on one side of it, either the inner or the outer. Occasionally I have found the tumor high up and toward the median line. Now, these variations in the situation of the perityphlitic swelling correspond closely with the anatomical variations, which have been ascertained to affect the appendix itself. As a rule, it springs from the lower and back part of the cæcum, behind which it lies curled upward, its length usually being in the adult from three to five inches; but it has been found as short as one inch and as long as nine inches. Moreover, it may arise from the inner or the outer side of the cæcum, and, instead of running behind the latter, may occupy a lateral position. Finally, it may be directed downward toward or even beyond the brim of the pelvis. Now, the correspondence between the several positions of perityphlitic swellings and the anatomical variations in the situation of the appendix is certainly remarkable, and suggests that the relationship described may be intimate and causative.

But, however we may explain the pathology of this class of cases, it is certain that they are of frequent occurrence. I was once told by an eminent surgeon that he had never met with a case of perityphlitis which terminated by resolution. I am unable to reconcile his experience with my own, and think that his must have been either small or exceptional, for I have seen almost as many examples of this kind as of any other. Furthermore, I have often sought for information on this point from busy medical practitioners, many of whom have testified that such cases were, in their experience, the rule, suppuration being the exception. All, however, acknowledged that they were common. Unfortunately, we are unable to distinguish this class of cases from those that are destined to go on to suppuration, but the recognition of them is surely important when the question of very early operation presents itself for consideration. As bearing on this point, it is well to remember that, although cases of perityphlitis which afterward end in resolution usually pursue a mild course, they are often attended with acute and threatening symptoms during the first two or three days—a fact which may be fairly ascribed to the existence of a localized adhesive peritonitis.

The second group of cases I have observed in practice are those which issue in the formation of a circumscribed abscess. I am unacquainted with any means short of mechanical exploration by which we can at an early period discriminate these cases from the ones belonging to the first class. According to my experience, the lapse of a week is generally required before the diagnosis in this respect begins to clear up. After that time has passed I am accustomed to see matters growing either better or worse, and in the latter case I suspect an abscess has formed. Such abscesses, I have taught for many years, are extraperitoneal. I have so fully dwelt upon this topic elsewhere that I should avoid allusion to it on the present occasion if I were not convinced of the high importance of holding correct anatomical views in the event of resorting to what are termed early operations. But, inasmuch as the question has a practical side, and since it has been maintained in this society * that, as a rule, perityphlitic abscesses are intraperitoneal, I must endeavor to show that such is not the case. Whether, in the very beginning, such abscesses are sometimes intraperitoneal is a point I do not wish to consider, as it is irrelevant to the present discussion. But I contend that what we all recognize as a perityphlitic abscess is situated outside of the peritonæum. Neither do I mean to assert that circumscribed peritoneal abscesses are unknown, for I have seen such purulent collections, and they have been carefully described by Grisolle and other writers. What I wish to say is that they are rare. The usual course taken by the pus formed in a perityphlitic abscess is as follows: It is found at an early stage in the lax connective tissue that lies between the iliac fascia and the peritonæum adjacent to the cæcum and appendix. Meanwhile the peritoneal cavity is shut off and defended by adhesions which have taken place between the cæcum and appendix on the one hand and the peritonæum lining the iliac fascia on the other. Were it not for this, general septic peritonitis would almost certainly ensue. Supposing the matter to occupy at first the situation mentioned, its subsequent progress is easily understood when we keep in mind the relations of the loose connective tissue above mentioned. As the pus increases in quantity it generally descends along the iliac fossa and strips up the peritonæum, which is here very loosely attached to the iliac fascia. The serous membrane is thus made to cover the front and sides of the advancing abscess, and it plays an important part by protecting from infection the general peritoneal cavity. Should the abscess continue to increase after it has reached the level of Poupart's ligament, it will be prevented from passing down upon the thigh by the firm union between the fascia iliaca with the fascia transversalis, and will, if the abscess points, most likely come to the surface above Poupart's ligament, the matter being situated, as will be noticed, between the fascia transversalis in front and the peritonæum behind. Often, as we know, the course taken by the pus is not that which has been described. It may pass down into the pelvis toward the rectum or across toward the opposite side of the body, or upward toward the kidney. Sometimes it reaches the diaphragm, which it may perforate, thereby entering the chest, and occasionally it ascends behind along the psoas muscle. These remote extensions of the abscess are often seen in neglected cases. Now, it should be observed in this connection that the burrowing is favored, and the course taken by the matter is often determined according to well-established anatomical peculiarities, the retroperitoneal tissue being lax and abundant, and

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* Weir, "A Plea for Earlier Operations in Perityphlitic Abscesses," etc., "Med. Record," vol. xxxi, p. 653. Weir seems to base his opinion on two authors, namely, With and Fitz. I have examined carefully the writings of both, but have failed to discover any evidence.

for his own investigations

therefore easily invaded. But in no one of these cases does the peritonæum give way. When it does, and the contents of the abscess enter the serous cavity, death from acute septic peritonitis is almost inevitable. But such an accident is more often spoken of than seen, and it has never yet occurred to me in the course of my practice. Time will not allow me to discuss this question further, and this is perhaps unnecessary, because I feel sure that my views are accurate, having often had occasion to verify them at post-mortem examinations. To render my explanation clear, I have caused to be prepared the accompanying diagrams, and I append, for the instruction of any who may be in doubt upon this point, a list of works in which conclusive evidence can be obtained. The question is not one of opinion merely, but has been settled by anatomical demonstration.*

I have insisted upon the extraperitoneal situation of these abscesses, because if the fact is ignored or denied the dangerous mistake of cutting into the peritoneal cavity when they are incised will be of frequent occurrence. Prudent surgeons take scrupulous care to avoid this error.

Concerning the treatment of this class of cases, I wish to confine my present remarks to the consideration of a single inquiry, namely, When is the best time to operate? The question is not so simple as some are disposed to think, and I should say that no rule could be laid down which could be applied to all cases. Those who are vehement in their advocacy of surgical interference at a very early period †—that is to say, within the first two or three days of the disease—and who religiously obey the dogma "*Ubi pus ibi evacua*," seem to overlook the fact that by strictly carrying out one principle they may be violating another of equal importance. The question presents more than one aspect for consideration, and is worthy of deliberate examination.

In the first place, I ought to state that I have been unfortunately misunderstood and criticised for having argued in favor of a fixed time for evacuating these abscesses, whereas I have said distinctly "that the question of operation is one that can not be settled by time alone, and that all the circumstances of the case should be carefully considered." * In reviewing my experience, I find that I have most often opened such abscesses at some time between the first and second week after the commencement of the disease, and rather toward the end than the beginning of the period referred to. By those who advise a resort to very early exploration, such practice would be called dilatory, but I have good reason to be satisfied with it, for I have

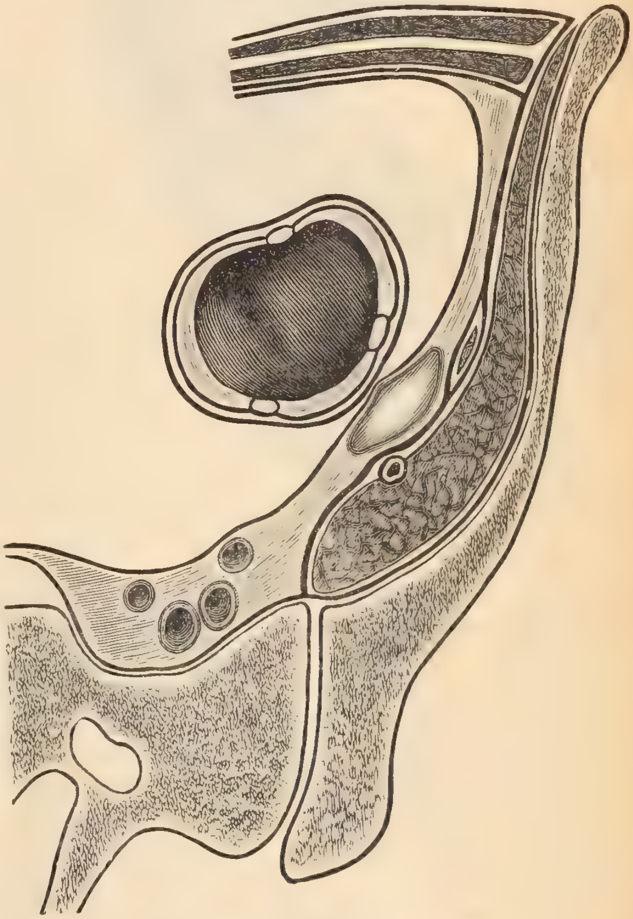

FIG. 1.

Each one of the figures represents a horizontal transverse section of the right side of the pelvis, including the cæcum. A drawing by Tillaux was employed as a model. Although not strictly accurate, the figures will convey my meaning. In Fig. 1 an incipient abscess is shown; Fig. 2 and Fig. 3 illustrate a more advanced stage of the disease, the abscess having reached the anterior abdominal wall. In Fig. 2 the peritonæum is seen to have been pushed aside from the abscess; in Fig. 3 the abscess is represented as being covered in front by a layer of peritonæum, which is in contact with that lining the anterior abdominal wall. In the last case incision of the abscess would involve opening the peritoneal cavity, unless adhesion had taken place, or the pouch of serous membrane could be dissected away from the abscess-wall.

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* In the discussion which followed the reading of the paper, Dr. Bull, who argued that perityphlitic abscesses were situated within the peritonæum, remarked that my references would probably only show how an erroneous opinion was apt to be handed down and copied without discrimination. It may be proper to state, therefore, that twelve of the authorities given offer evidence obtained by examinations made after death. Moreover, Dr. Bull will be found among the authors I have cited as holding the same view as the one I have advocated as correct.

1. Dupuytren, "Leçons orales," Paris, 1833, tome iii, p. 341.
2. Burne, "Med.-chir. Transact.," London, 1837, vol. viii, p. 222.
3. Grisolle, "Archives générales," 1839, tome 49, p. 162.
4. Sands, "Med. Record," vol. xiii, p. 56.
5. Hun, "N. Y. Med. Journal," vol. viii, p. 630.
6. Otis, *ibid.*, vol. xxvii, p. 527.
7. Wynkoop, "Trans. of the N. Y. Path. Soc.," vol. ii, p. 40.
8. Wakeman, *ibid.*, p. 66.
9. Kelsey, "Am. Jour. of the Med. Sci.," 1878, vol. ii, p. 85.
10. "Nouveau dict. de médecine," 1844, tome xxxvi, p. 467.
11. "Dict. encyclopédique," 1 série, tome xi, p. 476.
12. Oppolzer, "Wien. med. Wochenschrift," 1863, Band 13, S. 81.
13. Heineke, "Handbuch der Chirurgie," Pitha und Billroth, Bd. iii, Abt. ii, Lief. ii, S. 25.
14. Bull, "N. Y. Med. Jour.," vol. xviii, pp. 242, 248.
15. Gerster, "Aseptic and Antiseptic Surgery," New York, 1888, p. 247.
16. Bardenheuer, "Mittheilungen aus dem Kölner Bürger-Hospital," Köln, 1887, viertes Heft, S. 83.
17. Matas, *op. cit.*, p. 9.
18. Koenig, "Lehrbuch der speciellen Chirurgie," vierte Auflage, Band 2, S. 154.
19. Follin, "Pathologie externe," tome 5, p. 787.
20. Tillaux, "Traité d'anat. topog.," Paris, 1877, p. 760.

Bull, "Med. Record," vol. xxix, p. 265; Weir, *op. cit.*

* "Annals Anat. and Sur oc.," Brooklyn, 1880, ii, 256.

never known any harm to come from the delay. While I do not wish to put myself on record as unqualified in my objections against early operations, since these may in the future turn out to be expedient, I am obliged to deprecate the methods at present advocated of making early explorations, believing that they are premature, dangerous to life, and based upon an erroneous conception of the existing pathological conditions. A clear distinction should be borne in mind between cases of general septic peritonitis and those of perityphlitic abscess, which, as we well know, rarely, even when neglected, rupture into the peritoneal cavity. This danger has been urged in favor of early surgical interference, but it has been much exaggerated, and, as I have already remarked, such an accident has never come within my personal experience. Moreover, while it may readily be shown that perforation of the appendix often leads to fatal suppuration after the lapse of three or four days, this is not true unless the peritoneal cavity is directly invaded. In cases of perityphlitic or retroperitoneal abscess I have never known one of large size to form in less than ten days, and usually a much longer time is required. Bull* has reported a case in which he maintains that he opened a deep-seated perityphlitic abscess within the first forty-eight hours, but a careful examination of the patient's history, as related, makes it evident that the disease had existed for at least ten days. To be sure, the patient had been in bed only forty-eight hours, but "for ten days previously he had experienced a steady dull pain in the inguinal region, with occasional paroxysms which were more severe." This latter circumstance, when coupled with the subsequent discovery of an abscess, makes it clear that the disease had been going on all this time unrecognized. The fact that the man during this period had been able to travel and be up in the day-time is not unusual, and does not prove that he was well. If what I believe to be true regarding the mode of origin and progress of these abscesses is admitted, the reasons for postponing mechanical procedures for some days after the commencement of the disease, instead of resorting to immediate operation, must be obvious. In Parker's operation, which is the one generally performed, the pus is evacuated by cutting through the fascia transversalis and the parts superficial to it a short distance above Poupart's ligament. Now, this can not be done at an early period, because at that time the peritonæum, being neither pushed aside nor adherent, would be wounded before the abscess could be opened; and such an accident is always avoided by careful operators. Of course, if we adopt the view that these abscesses are situated within the peritonæum, we should proceed with less caution; but, as I have

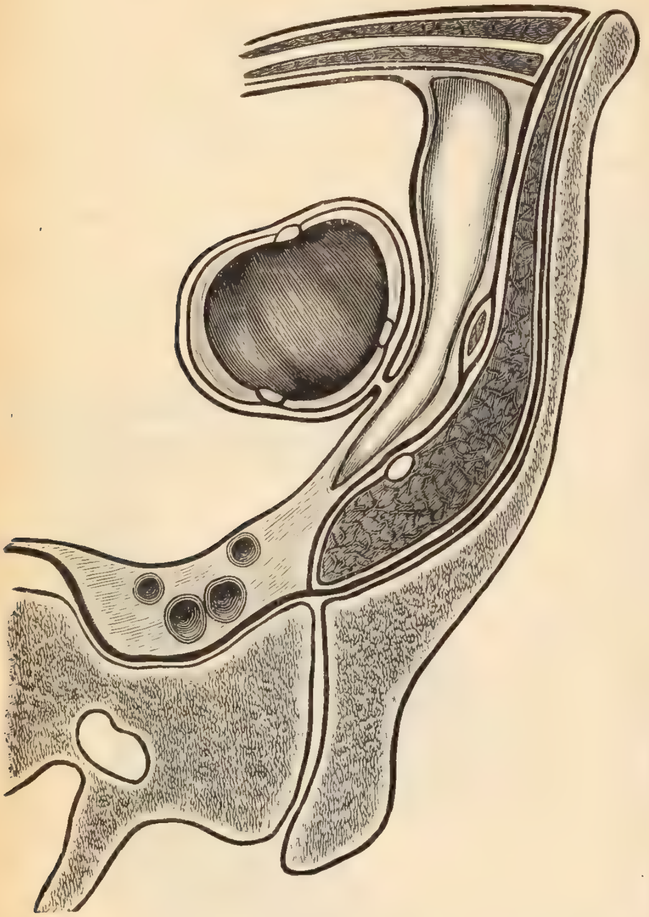

Fig. 2.

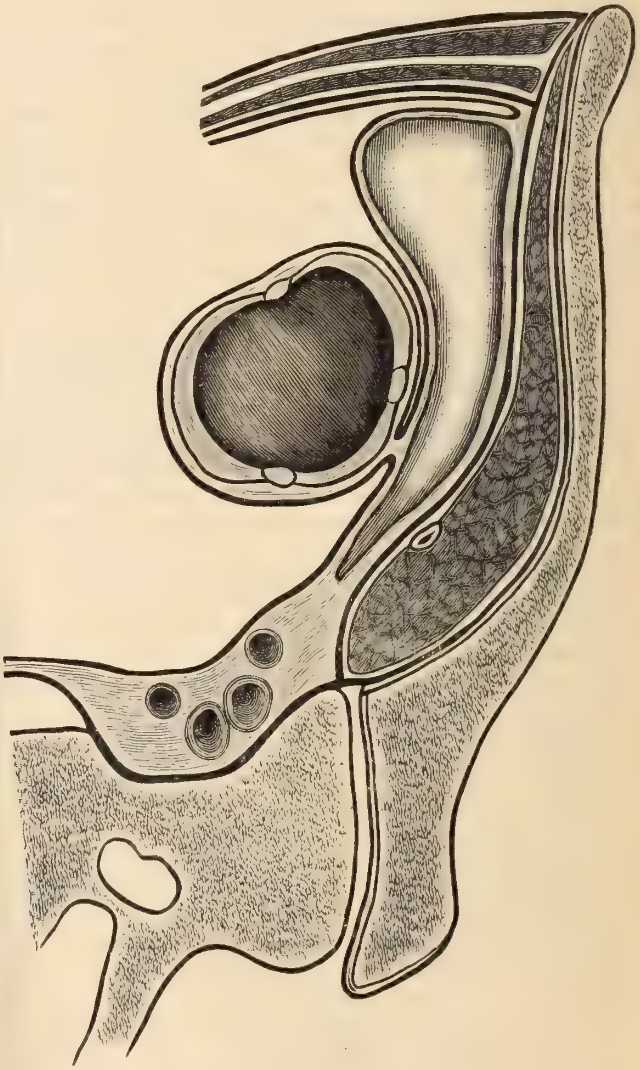

Fig. 3.

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* Bull, *op. cit.*, p. 265.

said, such a theory is untenable, and surgeons, with few exceptions, regard intraperitoneal incisions as unsafe. What difficulties may be encountered when operations are carelessly performed may be illustrated by an account of a case which occurred last summer in one of the largest hospitals in New York. It does not appear in the history-book, but a credible eye-witness of the operation has been good enough to furnish me with the following narrative: A male patient was admitted suffering with abdominal pain, nausea, and vomiting. The right iliac region was tender, and in it was detected a small indurated swelling, very deeply situated. The swelling became more distinct and larger by the fifth day, when, upon introducing an aspirating needle above Poupart's ligament, fœtid pus was discovered at the depth of four inches. An incision was then made over the tumor, and when the sac of the abscess was thought to be reached the needle was withdrawn. But when the supposed abscess was cut into, it turned out to be a piece of intestine which overlay the abscess, and which had been transfixed by the needle. An artificial anus was established and the abscess was opened and drained alongside the wounded intestine, but the patient died five days afterward with symptoms of peritonitis. There was no autopsy.

Similar objection may be raised against an early or indiscriminate resort to an aspirating needle when employed with the hope of detecting the presence of pus. I have elsewhere advocated the use of this instrument as a valuable means of diagnosis in doubtful cases, but I am always apprehensive when I introduce it deeply, and I never employ it in the early stage of perityphlitis, because I am afraid of infecting the peritonæum. This is a real danger, although its existence has been doubted. The risk is also much greater when large needles are inserted, as has been recommended.* Recently Roosevelt has reported an instance in which a competent surgeon caused fatal peritonitis by accidentally perforating the diaphragm with an aspirating needle used in a case of empyema.† And a similar risk undoubtedly exists of infecting the peritonæum in cases of perityphlitis if the exploring needle is employed at a very early period. It may be impossible to puncture the abscess without previously perforating the peritonæum or the intestine, and the former may be contaminated either by the contents of the abscess or of the intestine. A case in which death from the cause first mentioned took place has been related by Gerster,‡ who condemns the early use of the exploring needle in the disease under consideration. I am inclined to discourage such explorations, because I fear that they are becoming dangerously frequent. If it is taught with authority that they are absolutely safe, they will certainly be resorted to by many inexperienced practitioners, who may wish to make a quick and easy diagnosis. I was once called to see an eminent physician who had been punctured in the manner described, but, as no pus was found, he was treated with medicine and got well. Fortunately, no harm came from the exploration, which seems to me to have been unnecessary and reckless.

Even when the exploring needle is employed late the peritonæum may be wounded before the cavity of the abscess is reached, provided the puncture is made in front and in the usual situation. I have done this and have seen it done so often that I have ceased to regard the detection of pus with an aspirator as an indication that the abscess can be reached in the ordinary way without endangering the serous membrane. The old rule of keeping the needle *in situ* in order that it may serve as a guide to the knife should be followed with great caution. In case the peritonæum is found and is non-adherent, the needle should be withdrawn, and, unless the serous membrane can be got out of the way, the opening of the abscess should be deferred until adhesions have taken place. If the peritonæum has been torn, as it sometimes is, in consequence of the movements of the needle, the rent should be carefully disinfected and closed by sutures, provided, of course, the abscess does not leak. The simultaneous incision into the peritoneal cavity and the cavity of the abscess would, in my judgment, be a blunder, as it would then be difficult to prevent the occurrence of septic peritonitis. Under the circumstances described I have repeatedly found that, if left without further operation, the abscess would subsequently burst into the wound. Within the past few months I have had two such cases, which may be cited by way of illustration. Last October I operated, in consultation with Dr. John B. McIntyre, of this city, upon a patient who had a large perityphlitic swelling. No needle was used, but, feeling certain that a large abscess existed, I made the usual incision, hoping to reach it with safety. But the peritonæum was found to be lying upon the wall of the abscess, over which it could be freely slid, whereupon I abandoned further operation, and, having stuffed the wound with iodoform gauze, directed the application of a carbolized flaxseed poultice. At the time of the operation the man was very ill, and I feared he might die unrelieved. Forty-three hours later, however, the abscess ruptured into the wound, and he afterward made a speedy recovery. Last December I operated in the same manner upon a woman I saw with Dr. Robert J. Devlin. In this case the abscess did not break into the wound until thirty-one days after the operation, and during this interval no opportunity was afforded of safely incising the abscess, which appeared to be deeply seated. But no harm came from the delay beyond the postponement of the desired relief.

From what has been said it will be seen that I am opposed to explorations and incisions within the first two or three days, as these are recommended to be performed. My experience has taught me that often in cases of perityphlitis operations of any sort are unnecessary, and that even when an abscess has formed, some danger may be avoided by deferring the operation of incision until it has made a certain progress and reached a situation where it can be readily opened. But I have no desire to dogmatize, and I am not at all confident that the practice I have thus far followed will finally prove to be the best. I admit that delay is attended with risk, although the latter has been, in my opinion, considerably magnified, and I should strenuously urge the immediate evacuation of a fæcal abscess situated in the vicinity of the peritoneal cavity if this could be done safely. If, without employing dangerous methods of diagnosis, we shall ever be able to determine with precision the presence of such an abscess, I believe it will be found expedient to open it forthwith. But, under these circumstances, I should perform an operation with the expectation of discovering the abscess somewhere behind the peritonæum, deep in the iliac fossa, and I should take particular pains to leave the serous cavity undisturbed. I would endeavor to raise the peritonæum from the iliac fossa and approach the cæcum on its posterior aspect, as I did in the above-mentioned experiments which I made in 1865 for Dr. Parker. This I have never done in the living subject, but I believe it to be feasible, and Bardenheuer states that he has operated successfully in this manner in cases of chronic perityphlitis.

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* Bull, *op. cit.*, p. 265.

† "N. Y. Med. Jour.," xlvii, 49.

‡ Gerster, *op. cit.*, p. 248.

The third set of cases I have seen are of the kind exemplified by the subject of the present paper. Although occasionally confounded with perityphlitis, they are not cases of perityphlitis at all, as we usually understand that word, but of perforative peritonitis, due to the direct escape of fæcal matters from the perforated appendix into the peritoneal cavity. They are familiar to every practitioner, and differ from perityphlitis in their pathological anatomy, symptoms, and treatment. The essential feature in their morbid anatomy is the immediate invasion of the serous cavity by fæcal matters, and the consequent occurrence of septic general peritonitis. The symptoms are usually characteristic. As a rule, the onset of the attack is sudden and severe, and signs of collapse frequently appear in the course of forty-eight hours. Without attempting to give a minute description of the disease, I will say that I recognize it chiefly by the presence of symptoms of acute peritonitis, starting from the right iliac fossa, not accompanied with a hard, circumscribed swelling, such as we expect to find in perityphlitis. As some one has pithily remarked, there is in these cases "tumefaction, but no tumor"; and, in forming an opinion, I depend upon the absence of a tumor in the cæcal region as the strongest point in diagnosis. Of course, the rectum should be explored in every doubtful case, because a retroperitoneal abscess sometimes forms within the true pelvis. It is proper also to bear in mind that in rare instances a perityphlitic swelling may be inaccessible to the touch, as it sometimes is when it lies near the kidney, or on the psoas magnus muscle. But, when the diagnosis of perforative peritonitis is established, an operation, such as I performed on the patient now exhibited, is clearly indicated. Nor can it be done too early, because life is generally lost through procrastination. It must be undertaken before the septic infection has spread throughout the peritonæum. I think that success in my case was due to a fortunate combination of circumstances. The patient was seen early by a gentleman who appreciated the necessity of obtaining surgical advice without delay; the appendix was perforated in only one place, and was not gangrenous; and the operation was satisfactorily and expeditiously completed, without much handling or exposure of the intestine. But I fail to see anything in the case which ought to make us doubt that many like examples of recovery will soon be reported. I have witnessed many deaths from this disease, because its nature was not recognized soon enough to render it probable that the operation would be attended with any benefit. But, if surgical aid could be made available in time, many lives would surely be preserved.

The method of operation which I adopted seems to me deserving of recommendation. The vertical incision over the cæcum I believe to be the best, because it affords the easiest access to the parts presumed to be diseased. When the abdomen is opened in the median line, the cæcum and appendix are not so readily got at, and it has even happened during operations thus conducted that existing perforations of the appendix have been entirely overlooked, thus permitting the sufferer to die unrelieved. An oblique incision, running just above and parallel to Poupart's ligament, is, even when extended upward, highly objectionable in these cases. Such an incision will enable the operator to explore the iliac fossa and the back of the cæcum, and, when the appendix is situated in a retroperitoneal abscess cavity, to remove it, if necessary. But it affords only a scanty and imperfect access to the abdominal cavity, which, when opened at all, should be exposed by an incision that will facilitate the subsequent important steps of the operation. It is therefore very desirable that the surgeon should decide beforehand whether laparotomy is likely to be required, and not start on a voyage of discovery likely to end in disaster.

Hot water was used by me to clean out the peritoneal cavity, and disinfection was afterward undertaken with a moderate quantity of a strong solution of mercuric bichloride, 1 to 1,000. A small part only of the wound was closed with sutures, used to prevent the intestine from protruding; the remainder was lightly dusted with iodoform and stuffed with iodoform gauze. These details of practice are, perhaps, important.

Laparotomy, performed in the manner described, may be said to be the ideal method of exposing and dealing with the appendix; and, if subsequent experience should demonstrate the procedure to be free from danger, it may prove to be the best plan to do this operation early in all cases of disease here located. But, with our present limited knowledge, it would be presumptuous for me to express a definite opinion on this interesting point.

The fourth class of cases I have met with are characterized by their obscurity, the symptoms being indefinite and deceptive. The disease may come on slowly and insidiously, or the onset may be marked by a chill, vomiting and sharp pain. But the acute symptoms, when they occur, may subside, and the improvement which follows allays apprehension. The pain may be only moderate in degree, and may not radiate from the cæcal region. The latter may not be very tender, and there is no tumor. The temperature may remain normal, and the pulse may be only slightly accelerated. The bowels may act naturally, but are generally constipated. For a while the symptoms are obscure, and the diagnosis is difficult. But the improvement is of short duration. After a few days the patient's condition becomes serious and excites alarm. Comfort has been obtained, perhaps, by the use of opium, but gradually increasing abdominal tenderness and distension make us suspect general peritonitis. Stercoraceous vomiting occasionally occurs, suggesting the possible existence of mechanical intestinal obstruction. At the end of a week or ten days the heart's action begins to fail rapidly, hiccough, cold sweating, and perhaps delirium set in, and the patient sinks into a state of fatal collapse.

When, in such cases, an opportunity is afforded of examining the body after death, the mischief is seen to have originated in the vermiform appendix, which is usually perforated in one or more places, and which is frequently more or less completely gangrenous. Adhesions often exist, but they have not proved conservative, and the morbid process has evidently been one of slowly advancing septic peritonitis, which usually affects, by the time death arrives, the entire serous membrane. No large, circumscribed abscess is present, but pus and often fæcal matter are found between the intestinal coils, which, particularly in the vicinity of the cæcum and appendix, are glued together, as if nature had made an unsuccessful attempt to prevent the spread of septic contagion.

Cases of this kind are very unsatisfactory, inasmuch as we can not avoid feeling that life has perhaps been unnecessarily sacrificed. Had an accurate diagnosis been made at the start, the offending appendix might have been sutured or removed, and general peritonitis thereby prevented. It is in this class of cases, as well as in cases of acute perforative peritonitis, that early operation is desirable, if not imperative. But laparotomy is the only operation that holds out any prospect of a radical cure, and I should recommend it to be tried at a very early period in cases which belong to this last variety. Weir has proposed the use of the aspirating needle as a means of diagnosis in this form of disease, and his proposal is, I think, a good one.

Finally, it may be proper at this time to state emphatically that all the diseases to which I have referred are surgical cases from their beginning, and that surgeons alone are competent to decide whether operations are expedient, and to perform them, when necessary, at the right time and in the right manner. A man who devotes his attention to internal medicine alone is generally ignorant of the resources of surgery, and is apt to put off sending for a surgeon until drugs have failed to cure. Then, when a consultation is held, the disease may already have done its fatal work. Opium is a remedy of unquestionable value, but it often serves only to comfort the patient, and to lull all parties concerned into a false security. In the course of my practice I have seen many an unfortunate human being dosed to death, when his life might have been saved by prompt and skillful surgical aid.

Ocular Symptoms of Epilepsy.—"The examination of a thousand cases of epilepsy by Dr. Gowers revealed but one morbid condition of frequent occurrence in the ocular fundus," says the "Lancet," "and that was an unnatural equality of the size of the arteries and veins of the retina. Dr. Charles Oliver, of Philadelphia, has frequently observed a reduction of the visual fields for form and color, a granular condition of the chorioid in the macular region, a dirty red-gray degeneration of the optic nerve, and a thickening of the fibrous tissue of the retina."

INTESTINAL OBSTRUCTION:
ITS PATHOLOGY AND SYMPTOMS.*

By LEWIS A. STIMSON, M. D.

The obscurity which usually envelops the cause of intestinal obstruction, the difficulties that oppose its relief, and the great mortality attending it, have long made it one of the gloomiest chapters in medical history. Its varied pathology has long been well understood, for its many victims afforded abundant opportunities to observe the manifold causes that underlie it, but the timely recognition of those causes during life has been rare, and the treatment has seldom amounted to more than the administration of purgatives and enemata on the bare chance that the cases might be of a kind that could thereby be removed, and, that failing, the alleviation of suffering and the procurement of euthanasia.

But with the great extension that has of late been given to operative methods by the reduction of the dangers that were heretofore involved in them has come the hope of success to be obtained in these cases of obstruction by a more active and a better-directed interference, and the attention of the profession is earnestly turned to the solution of the problems that lie in the way of the proper and fruitful use of the measures we are prepared to employ, and of a wise choice from among them.

Of these problems, the one whose importance dominates that of all others at the present time is the diagnosis of the existence, the nature, and the cause of the obstruction—not merely the diagnosis of comparatively unimportant details, but, on the contrary, the differential diagnosis of fundamental conditions requiring methods of treatment so radically different that some would lie entirely within the province of the surgeon, others within that of the physician. To the solution of this problem, so far as its solution is practicable, our first and most earnest efforts should be directed, and we may then confidently anticipate that our accumulated therapeutical experience, by its more precise adaptation to the individual need and its freedom from the additions and divergences now imposed by diagnostic doubts, will promptly furnish the means for a wise choice among the many operative and medicinal measures that are now offered us.

The subject allotted me for the opening of this discussion is so large and the time so limited that it will be practicable only to review the broader characteristics and features of the various forms of obstruction, and very briefly to indicate their bearing upon the diagnosis and treatment.

The selection of this subject for discussion at this time and place needs no other justification than the facts to which I have just alluded and the additional one that intestinal obstruction claims hundreds of victims annually from our community. According to Treves, "over two thousand individuals die every year in England alone from various forms of obstruction of the bowels, exclusive of hernia." Leichtenstern, who collated the mortuary records of England and

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* Read, in opening the discussion on "Intestinal Obstruction," before the Medical Society of the State of New York, February 8, 1888.

Geneva, and the statistics of the General Hospital of Vienna, the St. Petersburg Hospital, and the Pathological Institute of Prague, estimates that, excluding external hernias and malignant neoplasms, one death of every three hundred to five hundred was due to intestinal obstruction. His statistics of details and those of other writers have been in the main collected from reported cases, and consequently can not be trusted to give the exact, or perhaps even an approximately exact, indication of the relative frequency of the different forms, for, as is well known, instances of the rarer forms are most likely to be published, and statistics made up from this source always contain an undue proportion of such cases. Nevertheless, they furnish certain indications in respect of relative frequency at different periods of life and in the two sexes which are of value and to which I shall refer in a moment.

The various causes of organic intestinal obstruction, exclusive of congenital defects and of external hernia and of cancer of the rectum which, because of the ease with which they can usually be recognized, do not come into question in the doubtful cases with which we are now concerned, may be roughly grouped as strangulation of the intestine by natural or abnormal bands or in accidental openings in the mesentery or omentum, internal hernias, the various forms of volvulus or twisting or knotting of the intestine, accidental sharp changes of direction by which the intestine is bent upon itself, intussusception, compression by tumors or viscera, organic changes (cancer) in the wall of the intestine by which its lumen is narrowed, obstruction by gallstones, enteroliths, or foreign bodies, or by accumulation of fæces dependent upon or productive of paralysis of the corresponding segment; and together with these must be considered that very important and common group of cases of functional obstruction dependent upon some inflammatory process, either a local or general peritonitis, or of the wall of the bowel itself. With this classification must be associated the important clinical division into acute and chronic cases, or those in which the symptoms appear abruptly with little or no warning and rapidly reach their height, and those in which the acute symptoms are long preceded by less marked ones of pain and constipation.

A full description of the pathology of the different forms is not suitable to the occasion or necessary for our present purpose; it will be sufficient for the purposes of the discussion briefly to mention their essential characteristic features.

In the first group, strangulation of a loop of intestine by natural or abnormal bands or in openings in the mesentery or omentum, the loop is strangulated by constriction of its base, and the constricting band may be either an abnormal cord formed by the elongation of an adhesion that has formed between two peritoneal surfaces during an antecedent local peritonitis, or it may be the appendix vermiformis or that diverticulum known as Meckel's and sometimes found at the lower end of the ileum, or the associated cord formed by the obliterated omphalo-mesenteric vessels, the free end of which has become attached to the abdominal wall or to one of the viscera, and under which the intestine has become engaged; or it may be a portion of the omentum that has become attached at its free border and has been rolled and matted into a cord. The condition is essentially identical with external hernia in its mechanical conditions, and also, therefore, in its rational symptoms and in the principles of its treatment.

In all of these cases, except those in which the constricting cord is the diverticulum or its associated vessels or the ligamentum terminale, there must have been an antecedent local or general peritonitis, the history of which is usually recognizable, since it is that either of a pelvic peritonitis in a female, a typhlitis or perityphlitis, a strangulated external hernia, or that following laparotomy. The diverticular strangulations are very rare, and, with very few exceptions, occur only between the ages of ten and thirty years.

In strangulation by the walls of an opening in the mesentery or omentum similar mechanical conditions and needs exist, but the history of an antecedent peritonitis is lacking. The variety is infrequent. The opening in the mesentery is usually at the part corresponding to the lower end of the ileum, sometimes in that of the jejunum or that of the colon. The opening is thought usually to be congenital, but a few cases have been reported in which it appears to have been produced by external violence, or perhaps by the breaking down of a degenerated mesenteric gland. With these may also be grouped the rare cases of strangulation through slits in other parts, as the suspensory ligament of the liver or an appendix epiploica, or rents in the parietal peritonæum, the uterus, or bladder.

Internal hernias, strictly speaking, are those in which the hernial protrusion lies entirely within the abdominal or the thoracic cavity, or between the parietal peritonæum and the outer part of the abdominal wall; but, practically, some small incomplete hernias of the natural orifices give rise to no recognizable external tumor. Among the different varieties, all of which are infrequent, may be mentioned diaphragmatic hernia, hernia through the foramen of Winslow, anterior and posterior retroperitoneal hernias, and the various ones found in abnormal pouches of and near the mesocæcum, the mesentery of the sigmoid flexure, the upper end of the jejunum, and even under the iliac fascia. Time will not permit more than the mention of these varieties and of the identity between some of the anterior retroperitoneal hernias (sometimes called preperitoneal) and the condition resulting from the reduction *en bloc*—that is, still included in its sac—of an inguinal hernia; the intestine lies in a pouch of peritonæum placed between the parietal peritonæum and the anterior wall of the abdomen or the iliac fossa, the orifice of the pouch being near the internal inguinal ring. Of the diaphragmatic hernias it must be said that some are congenital, others acquired; and that in the former, which are by far the more common (212 to 28), the parietal peritonæum and pleura are continuous with each other through an opening in the diaphragm due to a defect of development, and that consequently there is no true hernial sac. The diagnosis has been rarely made.

Under the term *volvulus* are included only those cases in which a loop of intestine, free of all adhesions, is twisted upon itself or is strangulated at its base by another loop which encircles it. The form most frequently met with, two thirds of all cases of volvulus, is simple twisting of the sigmoid flexure; and in the form in which two loops take part, the sigmoid flexure is usually one of them. The condition is of infrequent occurrence, between 4 and 5 per cent. of collected cases, and volvulus of the sigmoid flexure is rarely encountered under the age of forty years. In volvulus of the sigmoid flexure the upper end of the loop usually passes in front of the lower one at the point where the latter is continuous with the rectum, and if only a half-turn is made (180°), the constriction may involve only the lower end. This was the condition in the only case I have seen, and the flexure, as is usual, was greatly distended, to a diameter of more than four inches. It has been observed in autopsies that the twist has a marked tendency to recur when air is forced into the loop from the upper segment of the bowel, and it may therefore be doubted whether the simple liberation of the loop by untwisting it after laparotomy would effect a stable cure; possibly the establishment of an artificial anus in the loin would be necessary.

Sharp changes in the direction of the intestine, by which the wall becomes kinked and the lumen obliterated, are the result of adhesions; since the performance of laparotomy has become so common, the instances of obstruction due to this cause have multiplied.

In *intussusception* or invagination a segment of the bowel becomes turned into the one below it, and this engaged portion, the intussusceptum, is forced along by the peristaltic action of the portion within which it lies, and in this progress the upper part of the latter is also rolled in, *pari passu*. In about half of the cases the process begins at the ileo-cæcal junction, and the head of the intussusceptum, recognizable by the ileo-cæcal valve and the orifice of the appendix vermiformis, may appear at the anus. It is the most frequent of all the causes of obstruction, and is estimated by Treves to constitute three eighths of all cases. Half of all its cases occur, according to Leichtenstern, during the first ten years of life, and half of these, one fourth of all, during the first year. It differs markedly from the forms previously mentioned by being capable of spontaneous relief or of relief by injection, and in presenting a chronic as well as an acute variety. The hyperacute cases, those in which death follows within the first twenty-four hours, are very rare, less than 1 per cent.; the chronic, those in which the condition has persisted for a month or more, constitute 18 per cent.; the acute and the subacute, 48 and 34 per cent., respectively (Treves). In fully half of the acute and subacute cases a characteristic tumor can be felt in the abdomen, and in the great majority of these cases the symptoms are such that a diagnosis can be readily made; the great difficulty is in the recognition of the chronic cases. At the beginning the constipation is often incomplete, vomiting infrequent, pain moderate, and the abdomen soft and not distended or tender. As soon as the occlusion becomes complete, bloody mucus is discharged in the stools, and the signs of peritonitis appear. The mortality of all cases is 70 per cent., the highest rates being in acute cases in young children and in the chronic cases; of 59 of the latter collected by Raffinesque, 51 ended fatally. Of 249 fatal cases collected by Leichtenstern in which the ages were noted, 100 were in children less than one year old, and 48 in children from one to ten years old.

Obstruction of the bowel by the *pressure of a tumor or displaced viscus* may be acute or chronic, and the predominance of the former in reported cases is doubtless due to the fact that the latter, being less striking and important, are not usually reported. The occlusion is effected by compression of the bowel between the wall of the abdomen (usually the pelvis) and the compressing body, the latter being most commonly a tumor, as a fibroid of the uterus or an ovarian cyst. Among the less frequent causes are abscesses, tubal pregnancy, displaced spleen or kidney, hydatid cysts, and even a vesical calculus. Of 165 cases collected by Leichtenstern, the rectum was compressed in 60 per cent., the sigmoid flexure and descending colon in 12 per cent., the lower part of the ileum in 10 per cent., and the duodenum in 7 per cent. The compression of the ileum and of the sigmoid flexure in most cases appears to have taken place in the true pelvis. The frequency of compression of the duodenum, compared with that of the jejunum, which escapes entirely, and that of the upper and middle parts of the ileum, 4 per cent., is to be explained by its immobility, a condition which also characterizes the rectum. In the acute cases the occlusion appears usually to have been produced suddenly by a change in the position of the tumor, and sometimes by a change in the direction of the intestine, or by the lodging of hard fæces in a part of the canal already narrowed by the pressure.

Concerning occlusion by gallstones, it need only be said that fatal obstruction is very rare and has occurred only in the small intestine, and most frequently at the lower part of the ileum, and that the occlusion may or may not be preceded by one or more attacks of hepatic colic. When a gallstone of large size has entered the intestine, either through the dilated ductus communis or by ulceration and perforation, it commonly is evacuated, and a number of cases are on record in which larger stones have been thus passed than others that have caused fatal occlusion. A number of patients also have recovered by spontaneous evacuation of the stone after symptoms of acute obstruction have appeared and have lasted, even with stercoraceous vomiting, for several days.

Occlusion by intestinal stones, enteroliths, is still more rare; Leichtenstern's 1,500 cases include only 20 of this kind. The "stones" may be hard, heavy bodies, composed of phosphate of lime or of triple phosphates that have formed slowly within the intestine, or they may be much lighter, porous bodies that have formed by the matting together of undigested vegetable fibers. Acute occlusion appears always to have been preceded by symptoms of partial obstruction, except in one or two cases in which the stone seems to have formed within a diverticle and to have been suddenly dislodged.

The reduction of the caliber of the intestine by an organic change in its wall, cicatricial or cancerous, rarely gives rise to complete occlusion, and, when it does so, the occurrence is preceded for a longer or shorter time by symptoms of partial obstruction, which, with the history of the case, may make the diagnosis reasonably clear. The affections of the mucosa, which by cicatrization may lead to stenosis, are dysentery, catarrhal, tubercular, and syphilitic ulcerations; other lesions, acting in the same manner, are constriction of the intestine at the point where it has been compressed by the neck of a hernial sac, and traumatism by external violence. Both cicatricial and cancerous strictures are more frequent in the large than in the small intestine, and cicatricial stricture of the colon is, according to Treves's statistics, more than five times as frequent in women as in men. When the stricture occupies the small intestine, and even the first part of the colon, where the contents are liquid, the symptoms of obstruction do not appear so early as when it is in the lower part of the colon, where the fæces are more solid; in both cases there is constant dull pain referred to the seat of the stricture. In one of my own cases this pain was the only symptom that preceded the fatal total occlusion, although the stricture was in the transverse colon and was so close that it was finally occluded by the lodging of an apple-pit. The recorded cases of obstruction following the reduction of a hernia are but few, and the period that elapsed between the reduction and the occlusion varied from a few weeks to several years. In two cases, quoted by Treves, of stricture following a traumatism, the symptoms of obstruction appeared after intervals of three and four months respectively.

In obstruction by accumulation of fæces the essential pathological condition is a disability of the muscular tissue of the bowel, which may amount to complete paralysis. The affection is one which, by its symptoms, cause, and nature, belongs to the physician rather than to the surgeon, and never gives rise to that stormy train of symptoms, those diagnostic doubts, and that urgent need of active interference which are so common in the other forms.

Among the pathological conditions common to all, and bearing especially upon the diagnosis and treatment, are local or general peritonitis originating at the point of occlusion, marked distension of the upper segment of the bowel, and contraction, emptiness, of the lower one.

One other condition of sharp onset and rapid, urgent course, which is accompanied by constipation, vomiting, and other symptoms that are prominent in acute obstruction, must be mentioned in connection with these forms of occlusion because of the necessity of taking it into account in the differential diagnosis. It is that of acute local or general peritonitis; and in children, in whom idiopathic peritonitis, or at least peritonitis without recognizable cause, is not uncommon, the difficulties of the diagnosis may occasion the most harassing doubt.

Time will not permit the consideration of the associated pathological conditions and of the changes that ensue upon the occlusion; we must turn at once to the symptoms to which they and the occlusion and its cause give rise, confining our attention to the cases in which the occlusion is acute.

Pain is always present, and usually appears very early; at first, when slight, it is commonly referred to the umbilical region, is intermittent and colicky, and not increased by pressure, but later it may become constant, with exacerbations and remissions, and there may be in addition local tenderness at the seat of the obstruction. Treves says he has found very few exceptions to the rule that the pain is constant when the occlusion is complete, and intermittent when it is incomplete. It is usually tolerable, but may be very severe. It is in great part due to the peristaltic action of the segment of the bowel above the obstruction by which its contents are forced along, and the bowel unduly stretched and perhaps bruised against a constricting band. It is therefore habitually increased by taking food, by enemata, and even by exploration of the rectum, and is relieved by washing out the stomach. As peritonitis supervenes, its diffused pain is added to that which preceded.

Vomiting may appear early or late; when early, it is excited by the trauma of the strangulation, is a symptom of shock; its later appearance and continuance seem also to be due to the irritation at the occluded point, and to be in a measure dependent upon the continued peristaltic action, for it is commonly checked by measures which diminish the latter, such as opium and the washing out of the stomach. Its appearance is earliest, its character most copious, in acute strangulation, as in internal hernia or knotting of the small intestine; in intussusception it may be early or late; in volvulus of the sigmoid flexure it is late or absent. It becomes feculent, brown in color, offensive in odor, more or less promptly; the feculent character is not a proof that the matter vomited has come from the large intestine; it can be acquired by the prolonged sojourn of the food in the small intestine, and probably then represents a late stage of pancreatic digestion.

Constipation is almost always complete, if not from the very beginning, yet at least after one or two movements have emptied the lower bowel; but in two forms, intussusception and stricture of the large intestine, there is usually much tenesmus with evacuations of blood or bloody mucus, and in the former there may be diarrhœa. The tenesmus of intussusception seems to depend upon the presence of the intussusceptum in the colon, and especially in its lower part, and the diagnosis which is suggested by this symptom may be confirmed by the recognition through the abdominal wall of the sausage-like tumor formed by the invaginated bowel, or by its appearance in the rectum. Complete constipation, without even the evacuation of the contents of the lower segment, is the rule when the injury done to the intestine is severe, and it is then the result of reflex action excited by the traumatism, and not of the occlusion.

Distension of the abdomen is not a symptom of the onset except in those cases in which the complete occlusion has been preceded by partial obstruction which has led to an accumulation of fæces in the upper segment of the bowel; but it appears without much delay, except in the infrequent cases in which the obstruction is situated high up in the small intestine; it is late in intussusception and strangulation, early and marked in volvulus and stricture of the large intestine. The occurrence of peritonitis is, as usual, promptly followed by meteorism and rigidity of the abdominal wall.

The temperature is usually subnormal in strangulation, even after peritonitis has set in, and may be subnormal also in intussusception. Apparently, this is due to the shock occasioned by the violence done to the intestine—a shock which may amount to collapse, especially in the very young and very old, or when a large portion of the intestine is strangulated. It is normal in the other forms until peritonitis raises it.

Variations in the *amount of urine* have been thought to have some diagnostic value, diminution of the amount pointing to obstruction high up, but later observations have failed to confirm the opinion except in chronic and incomplete occlusions. In the acute forms, anuria or marked oliguria is the result either of shock (through lowering of the arterial pressure) or of the withdrawal of water by profuse vomiting, and in the latter case is associated with great thirst.

The tendency of all the causes of acute obstruction is to be permanent, and of their consequences to become aggravated, and in only very few cases can it be justly claimed that relief has been obtained by other measures than mechanical removal of the obstacle or the opening of the intestine above the occluded point. It is alleged that under the quieting influence of opium or of washing out of the stomach a volvulus may untwist, an internal hernia slip back, or a loop caught under a band free itself, but the cases advanced in support of the claim are very rare, and the diagnosis, of course, is not always beyond question. As a similar spontaneous relief is occasionally seen in external hernia, it can not be asserted that the occurrence is impossible, but it may well be doubted if it can happen after the acute symptoms are fully developed, and therefore it should not be counted among the possibilities, much less made the basis of treatment, in any fully developed case. From this statement three forms of occlusion may be in part excepted: intussusception, a stricture that has suddenly become occluded, and occlusion by fæcal accumulation. Not only is it believed that many of the colics of infants are attacks of intussusception that undergo spontaneous relief, but even in adults a few such cases have been observed in which the evidence may properly be accepted as sufficient. So, too, in a stricture that has become occluded, the passage is sometimes reopened by the forcing or softening of the plug or by a shift in the position of the intestine by which an associated kink has been diminished; and a fæcal accumulation may be relieved by the softening action of the catarrhal discharge set up by the irritation. Obstructing gallstones and enteroliths also may be spontaneously passed, but such cases are so extremely rare that the knowledge of their possibility is more likely to mislead than to be of service.

While this possibility of spontaneous relief or of relief by non-operative methods may only increase the doubts and difficulties of the attending physician in some cases by forcing him to choose between radically different methods of treatment without possessing the knowledge necessary to guide his choice and with the consciousness that an error in it may prove fatal, yet the associated fact that in all other cases it is sufficient simply to make the diagnosis of mechanical occlusion, without regard to the special form, is an important and valuable compensation. The details of this diagnosis will be considered by others. It belongs to my part of the subject only to call attention to the fact that the study of the causes of acute obstruction shows that all cases, after a short preliminary period of observation and expectation, may be grouped in two main classes: The first, and much the larger one, those in which relief can not be obtained except by active operative interference; and, second, those in which there is a possibility that it may be obtained by other means. Fortunately, too, in the second class the diagnosis can frequently be made with certainty. In intussusception and in stricture of the large intestine two symptoms are usually present which are found in no other form of obstruction—namely, tenesmus and the evacuation of blood or bloody mucus; and in the former, intussusception, it is also possible in the majority of cases to recognize a characteristic, sausage-like tumor by palpation through the abdominal wall, or perhaps to touch the end of the intussusceptum in the rectum. It is a great gain to be able to say that while the exact nature of the obstruction is unknown, yet it is certainly, or with great probability, of a kind that can not be relieved except by laparotomy.

Unfortunately, however, the question is not concerned solely with the discrimination of forms of obstruction; it concerns also—and this perhaps is the most difficult part of it and the part which has given rise to most of the uncertainty and hesitation in treatment—it concerns also, I repeat, the discrimination between actual occlusion and the functional occlusion or constipation which is so commonly seen in some acute abdominal affections. How can we learn surely to distinguish between the symptoms created by an acute occlusion and those similar ones, constipation, pain, shock, vomiting, meteorism, arising from external violence, acute typhlitis, perforative peritonitis from any of its varied causes, or the idiopathic peritonitis, if such there be, or the simple flatulent colic of children? Doubtless in some cases a careful study of the history and symptoms of the case will guide the physician to a correct diagnosis, but in many the doubt must remain notwithstanding careful and repeated examinations. The experience of such cases is common to us all. How often it has happened! The attending physician, fully alive to the dangers and alarmed by the severity of the symptoms, but unable to draw a positive diagnosis from them, calls a consultation. The patient is again examined, the history is retold, and the physicians retire to consult, but again no firm ground can be felt. Others are called in, but the multitude of counsel only adds to the uncertainty, for no two perhaps will give the same weight to any symptom, and the guess of each has so uncertain a basis that he is loath even to utter it. Each has known of similar cases that have got well, and none of them can say that the one before them is one of occlusion—one that certainly requires operation. Under such circumstances is it strange that they take refuge in expectation, for of two ills it is by common consent the less that a patient should die by the natural progress of his disease than that he should be killed by an attempt to cure him.

Concerning the frequency of these cases which closely simulate acute occlusion and the mortality which attends them I have been able to obtain no statistics, and yet there is, I think, good reason to believe that the recoveries in such cases in which the diagnosis has been in doubt are mainly responsible for the doubt, the hesitation, and the delay in the presence of actual occlusions that have been followed by so many unavailing regrets and have reaped so many victims. And I venture in closing to suggest that the collective observation of this society and its constituencies would, if directed for a year or two to this matter, yield results of the greatest value.

STRAMONIUM POISONING.

By W. F. CONNERS, M. D.,
OIL CITY, PA.

So little is written on poisoning by stramonium that the following case may not be devoid of interest to the medical profession:

On the evening of October 17th I was requested to see a mother and her six-year-old son, who were acting in a strange manner. I hastened to the house, and on arrival learned that about two hours before they had both partaken of some sage tea (as the mother supposed) for a cold. The husband and father said he went down town in the evening, leaving his wife sitting by the stove sewing and his son playing on the floor, and when he returned, after an absence of two hours, he discovered both wife and child staggering around the room, unable to sit or stand. Taking hold of his wife, whose mind was clear, he learned that she had taken, as she said, some sage tea, which at first made her head ache, and then she got so dizzy that she could do nothing but turn round. It seemed to her that she was trying to stand while the room seemed to spin around at a rapid rate.

Spreading a large quilt on the floor, he placed wife and child on it, and there they were when I arrived. They were apparently trying to walk around each other on their hands and knees, the head of each being forcibly inclined to the right, with a disposition to *manége* if left alone, showing the cerebellum in the vicinity of the peduncle to be particularly affected by the drug.

I left them on the floor while I instituted a search for the sage (?), and found a one-ounce package of stramonium herb, plainly marked, with three drachms missing, which I afterward learned was the amount the mother had used in a cup and a half of water, which was allowed to steep about ten or fifteen minutes before she strained it through a cloth, and, after adding some sugar, she gave the boy half a teacupful, drinking a full teacup of the decoction herself—*i. e.*, she had then taken the tea made from two drachms of the dried herb, while the boy had taken that of one drachm. Having now learned what the nature of the poison was, I examined the patients more closely. The pupils were dilated to the fullest extent; the eyeballs were suffused and devoid of expression; conjunctiva congested; the face flushed; the head oscillating from side to side when the patient was held, with a disposition to turn the head forcibly to the right; the mother muttering incoherently, in which the names of Georgie (her boy), sage, and George (her husband's name) were heard, while the boy would, at intervals of a few moments, utter a low, whimpering scream. I at once injected half a grain of morphine into the mother's arm, and a quarter of a grain into that of the son, and repeated it every half hour until four doses had been taken, supplementing the same with whisky and strong coffee without milk or sugar. Previous to giving the morphine I gave the mother a large dose of pulverized ipecac, followed by what tepid water she could be induced to take, without causing emesis. The boy fought us so that we could not give him any. After the second injection the vertigo was much less, and now a new train of symptoms set in in the mother and son. The former, who usually spent much time sewing, held her thumb and forefinger of the left hand up to a level with the eye, and with the right pointed to it, as one threading a needle; then, after a while, she grasped her dress with her left hand, and with the right went through the motions of sewing, stopping frequently to thread the needle as before. The son now would let no one touch him, and, if allowed to lie on the quilt, would remain quite still, while any effort to move or place the clothing over him excited resistance. The pulse at first in the mother ranged between 90 and 100, and was thready; in the boy, between 120 and 130, and lacked volume, which began to return on the administration of the morphine and whisky. After the fourth dose of morphine had been given, they both dropped into a quiet sleep, which lasted several hours. During all the time the mother would answer intelligently when spoken to, but would at once relapse into her confused state. I left them at 2.30 A. M., returning at 8 A. M., to find the mother suffering from an intense occipital pain, which lasted several days. The boy, who had several copious passages during my absence, was feeling quite well, though the pupils were still unusually dilated, and his face flushed. The mother was troubled with obstinate constipation, which required the free use of cathartics to overcome.

Correspondence.

LETTER FROM PARIS.

The Diagnosis and Treatment of the Dyspepsias.—Boric Acid.

PARIS, *February 8, 1888.*

THE most important communication made for a long time to the Academy of Medicine was one which Professor Germain Sée made a few weeks ago. I had the good luck to be present at some of his clinics at the Hôtel Dieu, where he gave the practical results of what he told the academy. It is almost certain that we must change almost all our notions in regard to stomach complaints, because the exact results of the new system of examination of the gastric juice will alter the uncertain diagnosis made by percussion, palpation, etc. Some few months ago a Dr. Günzburg, of Frankfort, spoke of a new reagent by means of which it was possible to detect hydrochloric acid in the gastric juice and not interfere with any other acid that might be present. This was phloroglucinevanilline. Nothing, however, was done in regard to the matter until Professor Sée took it up. It having been stated that cancer of the stomach showed a constant absence of hydrochloric acid as a sure sign, Dr. Sée feared that it would be like the famous sure sign of Romelaere, of Brussels, who maintained that cancer of the stomach was readily diagnosticated from an entire absence of urea in the urine. This sign amounts to nothing, for all patients who are in a state of inanition present the same condition as to the urea or the reverse, like the Austrian professor that Professor Sée likes to tell about, who ate four pounds of meat a day, and found eighty grammes of urea in his urine. This sign being worthless, Dr. Sée took to searching for the quantity of hydrochloric acid to be found in the stomach, with the result of making quite a discovery, for he found that there was an entire absence of this important acid in many serious maladies. For instance, in phthisis there seems to be constantly an absence of it in the stomach. The same is true in many cases of Bright's disease. The substance used is of a yellow-brown color, and the reaction is obtained by a single drop of it, which in the presence of hydrochloric acid gives a bright-red color and deposits crystals of a reddish matter. The other acids—such as lactic or acetic—have no action. The chlorides also have no influence in changing the color. If, then, such an exact reagent has been found, we shall soon see if Van der Velden and the others who suppose cancer to present invariably an absence of hydrochloric acid are correct or not. In another group of cases of dyspepsia seen in many maladies there is also a want of acid. On the other hand, there are digestive troubles that are caused by a supersecretion of acid; for instance, in girls with chlorosis, who are cured so easily with large doses of alkalies. According to Professor Sée, dyspepsia is simply a *chemical* normal reaction that has failed, and the want of acid is the reason of it. The stomach, not performing its work as a chemical laboratory in a proper manner, simply compresses the food and passes it on to the intestine, allowing the albuminates to escape before they have been peptonized, owing to the fact that hydrochloric acid is absent. A second cause may also be present. It is more than likely, says Dr. Sée, that the state of the blood in uræmic, tubercular, and other patients is such that it does not furnish a normal gastric juice. Still, diabetic, albuminuric, and cardiac patients do not complain of the stomach not working well, and in the hospitals this part of their trouble is not even thought of by the physician, who prescribes for quite a different matter, while this may underlie all the patient's trouble. It is true that from time to time such patients complain of some indigestion, but little heed is given to it, and, as the intestine keeps up the stomach's work for a long time, these patients do not see that their nutrition is gravely compromised until it is too late. I can not now take up space enough to give more of the details of this interesting matter, but I propose to follow the experiments now being made daily at the Hôtel Dieu by Professor Germain Sée and his *chéf de clinique*, Dr. Durand-Fardel, and report hereafter. The method used is as follows: They give a patient two boiled eggs only in the morning, fasting, with a little water, and two hours afterward they withdraw with the stomach-pump (Dr. Potain's siphon is used) only a few cubic centimetres of the stomach secretion, and the reagent is tried at once. But I must hasten on to the therapeutical results given by Professor Sée. It must not be thought, he says, that the stomach is acid when patients complain of heartburn, or those well-known sensations of pyrosis, because in these cases the gastric juice may be neutral, or *but very slightly acid.* The only way is to make the test by sounding the stomach and using the reagent, as the administration of acid without doing so may cause most serious troubles. Again, even when there is no acid found, as in cancer cases, it does not mean that acid is indicated, for in such cases *everything is wanting*—all the functions of the stomach, not only the chemical one, but also the motor, and the formation of the gastric juice itself; so it is useless if not dangerous to give acid. The real domain of the acid treatment is in dyspepsias with very little acid, or where the organic acids predominate, and a gastritis of this class, or a dilatation of the stomach, where there is often an *overproduction* of organic acid. Hydrochloric acid in a solution of from three to five per cent. is used, from eight to ten drops being given in a large amount of water, and repeated two or three times in the course of the digestion, and even at the end of digestion. In regard to the alkalies, when needed, Professor Sée recommends soda to neutralize an excess of acid, and he finds that as much as 75 or 90 grains of sodium bicarbonate are generally needed, and this is to be repeated during the three hours of digestion, and continued for several days. Evacuants are to be used in cases of atony of the intestines and stomach; first of all, the well-known *lavage*, or washing out. But, if it is the intestine that is at fault, as in what Dr. Sée calls the *pseudo-dyspepsias*, then it is to laxatives and purgatives we must look. Why is it that these last have always enjoyed a good reputation in dyspepsias? Simply because the intestine often provokes the phenomenon of a "pseudo-dyspepsia of the stomach," but its seat is really in the intestine itself. In regard to the alimentary regimen in stomach troubles, Professor Sée passes them in review. Milk treatment, he says, is employed in all sorts of cases, and the stomach goes on dilating more than ever, and the poor patient, unless he is given at least four quarts daily, goes on getting thin, and, while he has no more pain or flatulence, inanition goes on. Care must be taken in regard to this, and Dr. Sée thinks that the only exact indication for milk in stomach complaints is when there is an ulcer. Patients with other complaints should have a mixed diet. Another favorite regimen is to give light, tender meats, and forbid vegetables and fats. Here, again, the patient runs the risk of inanition, and it is only to be thought of in those cases of dyspepsia where mucus is in too great quantity. In cases where hydrochloric acid is wanting, it is often dangerous to deprive the patient of such foods, as pastes, like macaroni and even dried peas and beans, may be allowed if they are carefully peeled and made into a mash. Potatoes may be used if well cooked under the ashes. On the other hand, in the acid states, meat is to be given on all occasions, and fish of all kinds can be added. In conclusion, M. Germain Sée recommends giving up alcohol and drinking tea, which is no doubt good for French people, *who never use it.*

Dr. Gaucher gives some interesting experiments he has made to test the toxic power of boric acid. It is important to know this, owing to the large use made of this substance as an antiseptic. After a number of tests on animals it was found that it would require as much as 75 grammes (more than two ounces) of boric acid, given for ten days, to poison a man. As this enormous amount is never used, only a feeble proportion of it being needed, it may be stated that boric acid is not poisonous in medicinal doses. This being so, and as it is not caustic or irritant, and is besides without taste or smell, there seems no reason why it should not be employed whenever an antiseptic is needed. Dr. Gaucher found that he had only to use a pomade of three parts of boric acid to thirty of glycerole of starch in place of the highly scented oil of cade, to get better effects in impetigo and other skin diseases. Again, in cases of phthisis where there was a fœtid expectoration, doses of seven or eight grains of boric acid were used, with the result of not only destroying the fœtid smell, but also of diminishing the expectoration and causing it to become more fluid in its nature. As this drug is eliminated by the urine, it has also been given internally in cystitis, in fifteen-grain doses, with considerable benefit. Surgeons have given it in injections, some using borate of soda. Boric acid is not astringent, as borax is; so it should be preferred. Its use in fœtid catarrhs and in other forms of catarrh is indicated locally, but its internal use is the point that is insisted upon at present, when it is now made certain that its poisonous properties have been much exaggerated.

Apothecaries' Latin.—"A Berlin contemporary informs its readers," says the "British and Colonial Druggist," "that the famous surgeon, Dr. Esmarch, is the leader of an attack upon 'Apothecaries' Latin,' and he is supported in this campaign by several of the most eminent physicians and medical professors in Germany. He asks why a foreign tongue should still be employed by physicians in writing their prescriptions, when a general expulsion of foreign terms and phrases, and the substitution of their German equivalents, has become the order of the day. A pharmaceutical lexicon is being prepared for the use of doctors and chemists, so as to assist them in prescribing and making up prescriptions in the tongue understood by the people."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 25, 1888.

ACUTE HEART DISEASE IN THE YOUNG.

In the treatment of children one can not bear too intently in mind the fact that in the young acute diseases of the heart are not infrequently overlooked because few if any subjective symptoms are presented. The same remark applies with equal force to rheumatism—one of the fruitful sources of heart disease—at that period of life. Many a child is treated for "gastric fever" which, if thoroughly examined, would be found to have swollen joints and other evidences of acute rheumatism—of course, without the intense pain observed in the adult. It is this absence of pain that proves the stumbling-block, for the physician, unless he happens to be one who sees a great deal of children's diseases, is apt to associate the febrile symptoms with almost any other diseased condition than articular rheumatism, because in the adult agonizing pain stands out as so prominent a feature in that affection.

In a clinical lecture recently published in the "Revue générale de clinique et de thérapeutique," by M. Jules Simon, that well-known teacher treats of acute cardiac diseases of rheumatic origin in children. Pericarditis and endocarditis, he remarks, are not at all uncommon during an attack of articular rheumatism in infantile life. The acute pericarditis of childhood does not manifest itself by anxiety, orthopnœa, and painful palpitation, as in adult life, and tenderness on pressure is not so common; but, on the other hand, the physical signs are more pronounced, owing to the thinness of the chest wall. A friction sound, fremitus, and tumultuous action of the heart are prominent features. If effusion occurs, the heart sounds will become feeble and distant, and the situation of their maximum intensity will be changed. The pericarditis is often complicated with endocarditis, and then, in addition to the physical signs already mentioned, a soft blowing murmur will be heard with the first sound. As there may be no disturbance of the circulation or respiration, there will be no congestions, œdemas, or dropsies, as in older subjects. When acute endocarditis occurs alone, it displays the same absence of functional manifestations and the same accentuation of the physical signs. The author draws attention to the much more favorable prognosis of these conditions in the very young than in the old and the middle-aged; the endocarditis may undergo complete cure, the murmur disappearing and the hypertrophy even being compensated for by development of the chest and other parts of the body. A fatal termination is extremely rare.

In the treatment, Simon recommends, in very robust children, the application of leeches over the precordial region; and, in others, dry-cupping or frictions with a liniment containing chloroform, hyoscyamus, and conium. When all tenderness on pressure has disappeared, he warmly advises vesication, which is to be carried out by daily applications of small blisters; the blistered part is to be poulticed and afterward dusted with boric acid. Internally, he gives squill and *Convallaria maialis*, but, if there is painful palpitation, he also gives bromide of potassium for three or four days. The diet should consist of milk and bouillons so long as there is any fever. The affection requires about two months of continuous care to lead to convalescence.

A lecture by M. Villard, on diseases of the heart at different ages, published in the same number of the journal mentioned, is interesting in connection with Simon's. Villard also calls attention to the insidious character of cardiac diseases in early life, and to the absence of subjective symptoms. Rheumatism, he thinks, is comparatively rare in infancy, but there are other sources of heart disease—the eruptive fevers, chorea, and whooping-cough. Endocarditis has been observed even in fœtal life, and an interesting feature of it is that it affects the right side of the heart by preference. This has been explained by the greater strain that the right heart has to bear in the fœtus; but it has also been maintained that the disease is due to micro-organisms entering the fœtal circulation from the mother's blood and naturally being carried first to the right cavities of the heart.

Villard's views on the prognosis and treatment coincide in the main with Simon's, and both authors' remarks teach an important lesson; in all cases of eruptive fevers, chorea, whooping-cough, or rheumatism in children, auscultation of the heart should be practiced from day to day, and the physician should be constantly on the lookout for cardiac lesions. Although their immediate significance is not very serious, their early detection and timely and proper treatment lead to their perfect cure—a result that does not always happen when they are left to nature, as witness the many cases of cardiac disease in adolescents that can be traced back to the first years of life.

MINOR PARAGRAPHS.

THE SKIN AND CANCER HOSPITAL.

The "Fifth Annual Report" of the New York Skin and Cancer Hospital, recently issued, gives evidence of the continued usefulness of that institution. During the past year a country branch was opened at Fordham, as we informed our readers at the time, and that feature of the hospital will unquestionably prove a great public benefit. The fact that the institution is without an endowment gives it a decided title to be made one of the principal channels through which the gifts of the benevolent may be made to reach the poor who need the benefits of such a hospital.

THE PHYSICIANS' MUTUAL AID ASSOCIATION.

We are glad to learn, by the "Nineteenth Annual Report" of the New York Physicians' Mutual Aid Association, of the continued prosperity and increasing usefulness of the organization. In a few months it will be twenty years since the association was organized. At the date of the report, November 10, 1887, its members numbered 471. The membership has increased steadily in numbers, but, as the retiring president, Dr. George A. Peters, remarked at the last annual meeting, it is still far behind what it should be. The association's field now is the whole State of New York, and every eligible member of the profession ought to join it; those who are not secure against want should join for prudential reasons, and others as an act of kindness to their less favored brethren. The affairs of the association have always been well managed, and there is every reason to believe that it will continue to deserve the confidence of the profession.

THE MICHIGAN LABORATORY OF HYGIENE.

Some months ago we expressed our confidence in the usefulness of the laboratory of hygiene which the Michigan State Board of Health was about to establish. In this feeling we are confirmed by the account given in the "First Quarterly Report" of the investigations that have already been carried on. They comprise an inquiry into the ætiology of typhoid fever, with special reference to an outbreak in the village of Iron Mountain, and a further examination into the subject of cheese poisoning, both by the director of the laboratory, Dr. Victor C. Vaughan; also an "Exposure of the Stenocarpine Fraud," by Mr. F. G. Novy. According to this gentleman's analysis, "gleditschine" ("stenocarpine") solution contains 6 per cent. of cocaine hydrochloride, 0·50 per cent. of atropine sulphate, and about 0·33 per cent. of salicylic acid. It is to be hoped that the Michigan Legislature will soon see the propriety of endowing the laboratory with more adequate funds.

RURAL SANITATION.

We are glad to learn that a sanitarian so competent and so highly respected as Dr. Ezra M. Hunt, of the New Jersey State Board of Health, has issued a circular calling popular attention to the dangers attendant upon insanitary arrangements among the agricultural population, who, as he justly remarks, too often take it for granted that the mere fact of its being situated in the country is a sufficient guarantee of the healthfulness of a home.

LACERATION OF THE CERVIX UTERI.

Dr. Emil Noeggerath, formerly of New York, now of Wiesbaden, has contributed to the "Berliner klinische Wochenschrift" an article giving the results of his inquiries into the pathogenetic effects of lacerations of the cervix uteri. According to a summary published in the "Lancet," Dr. Noeggerath sums up his conclusions as follows: "1. Women with lacerations are more prone to conceive than those without; they also are less liable to miscarry. 2. The position of the uterus is not affected by lacerations. 3. The axis of the uterus is not elongated in consequence of lacerations. 4. Erosions and ulcerations are as common in one class as in the other, and disease of the cervical tissues is not more common in lacerated than in unlacerated cervices. 5. Lacerations have no influence in producing uterine disease, either as regards frequency or intensity. 6. Eversion of the lips is never the direct result of a laceration. The restoration of the shape of the cervix can have no influence on the uterus."

Some of these conclusions are startling, and we have little doubt that they are all erroneous. If the first of them is correct, it is difficult to conceive why the Almighty did not send every woman into the world with a split cervix. Although the present tendency here in America is toward moderation in recommending the operation of hystero-trachelorrhaphy, we shall be surprised if some of those who justly appreciate its value do not undertake before long to show the fallacy of Dr. Noeggerath's reasoning. It is true, however, that the necessity of such a vindication is not very apparent, especially as Dr. Noeggerath's propositions do not seem to have carried conviction to those present at the meeting at which his paper was read, if we may judge by the reports of the discussion in the German journals.

A HANDY CURE FOR HICCOUGH.

There may be some occult connection between hiccough and the auditory apparatus. Not long ago we published an account of somebody's method of stopping hiccough by applying a drop of water to the external ear. Now Dr. Dresch, of Foix, in France, has written a letter to the editor of the "Bulletin général de thérapeutique," in which he describes another method, almost as simple, also relating to the ear. Dr. Dresch states that the procedure was not original with him, but that he can not remember how it was made known to him. The method is as follows: The sufferer should close his external auditory canals with his fingers, exerting a certain degree of pressure; at the same time he is to drink a few sips of any liquid whatever, the glass or cup being held to his lips by another person. The effect is said to be immediate.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 21, 1888:

DISEASES.	Week ending Feb. 14.		Week ending Feb. 21.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	14	2	8	5
Scarlet fever	160	21	160	27
Cerebro-spinal meningitis	2	2	4	4
Measles	64	10	55	10
Diphtheria	187	54	135	34
Small-pox	7	0	2	1

Dr. Sands's Case of Laparotomy.—As we go to press, Dr. Sands informs us that a letter has just been received from the patient (a boy of eleven years) whose case is reported in this issue, stating that the wound is entirely healed.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 5 to February 18, 1888:*

Janeway, John H., Major and Surgeon, and Hopkins, William E., Captain and Assistant Surgeon. Detailed as members of the Army Retiring Board in San Francisco, Cal., convened by S. O. 168, A. G. O., July 22, 1886. S. O. 28, A. G. O., February 4, 1888.

Jarvis, Nathan S., First Lieutenant and Assistant Surgeon. Ordered from Fort Lewis, Colorado, to Fort Leavenworth, Kansas. S. O. 30, A. G. O., February 7, 1888.

Arthur, William H., Captain and Assistant Surgeon. Leave of absence extended two months. S. O. 35, A. G. O., February 13, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy during the week ending February 18, 1888:*

Olcott, F. W., Assistant Surgeon. Detached from the Minnesota and ordered to the Atlanta.

Heyl, T. C., Surgeon. Ordered to the Receiving-ship St. Louis.

Martin, H. M., Surgeon. Detached from the St. Louis and ordered to the Swatara.

WEBSTER, CHARLES F., Assistant Surgeon. Ordered to the Receiving-ship Vermont.

FIELD, JAMES G., Assistant Surgeon. Detached from the Vermont and ordered to the Swatara.

WHITING, ROBERT, Passed Assistant Surgeon. Detached from the Iroquois and ordered to the Coast Survey.

TRACY, ELMER C., Assistant Surgeon. Resigned, to take effect immediately.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending February 18, 1888:*

WASDIN, EUGENE, Passed Assistant Surgeon. Relieved from duty at Marine-Hospital, Chicago; ordered to Marine-Hospital, Mobile, Ala. February 16, 1888.

NORMAN, SEATON, Assistant Surgeon. Relieved from duty at Marine-Hospital, New York, to assume charge of the service at Evansville, Ind. February 6, 1888.

Society Meetings for the Coming Week:

TUESDAY, *February 28th:* Boston Society of Medical Sciences (private).

WEDNESDAY, *February 29th:* Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

THURSDAY, *March 1st:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *March 2d:* Practitioners' Society of New York (private).

SATURDAY, *March 3d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

OBITUARY NOTES.

James Craig, M. D., of Jersey City, died on Friday, the 10th inst., in the fifty-fifth year of his age. The deceased was a native of Scotland and a graduate of the Medical Department of the University of the City of New York, of the class of 1861. Dr. Craig was a practitioner of marked acumen and good judgment, also a man of originality of ideas, as was exemplified by the few articles of his that we have published, all of which were of an eminently practical character.

Letters to the Editor.

SULPHICHTHYOLATE OF AMMONIUM IN THE TREATMENT OF PELVIC INFLAMMATIONS.

163 CLINTON STREET, BROOKLYN, *February 20, 1888.*

To the Editor of the New York Medical Journal:

SIR: Permit me to call the attention of your readers to this use for a drug that is now attracting such general attention. I had been using the remedy for burns for several years, and determined lately to test its efficiency on inflammatory masses in the pelvis. The results have been more than encouraging—they have been astonishing. The first case for which I used it was one of left pyosalpinx. Of the diagnosis I am positive, having had the case under careful observation for more than a year. The patient had been pronounced by me well, when, to my disgust, the inflammatory symptoms returned with the left-sided hard mass and purulent discharge. She was confined to her bed and suffered very much from the pain. I saturated a pledget of cotton with a solution of ichthyol of about one per cent., and placed it against the mass, and the next day the patient was able to attend to her household duties.

I have now used the sulphichthyolate of ammonium in seven cases of intractable pelvic inflammation, and with all obtained relief; in four with particularly happy results. From this experience I believe we have an agent that will prove of the greatest benefit in those most troublesome cases for the gynæcologist.

A. H. BUCKMASTER.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of January 25, 1888.

The President, Dr. LEWIS A. STIMSON, in the Chair.

Case of Arterio-venous Aneurysm of the Left Common Carotid and Internal Jugular; Recurrent Pulsation after Ligature of the Common Carotid.—The PRESIDENT presented a patient upon whom he had operated four years ago last October for the cure of arterio-venous aneurysm resulting from a stab-wound of the neck. The case had been reported in full in the "American Journal of the Medical Sciences" for April, 1884. A communication between the vessels still persisted, and the bruit, which returned slightly a few days after the operation, was now as loud as ever. It could be heard nearly as high as the ear and as low as the clavicle, and was arrested by pressure below the angle of the jaw.

In reply to a question by Dr. H. B. SANDS, the reporter stated that the small, deep veins, probably the middle thyreoid, encountered in the operation were distended, but that there was no sac between the artery and vein, and no appreciable dilatation of the internal or external jugular vein.

Dr. J. A. WYETH asked regarding the location of the aneurysm with reference to the point of bifurcation of the common carotid.

The PRESIDENT replied that it was situated about half an inch below that point.

Dr. SANDS called attention to the fact that the bruit was arrested by pressure above the clavicle.

The PRESIDENT thought it was to be accounted for by arrest of the flow in the internal jugular.

Radical Cure of Hernia.—Dr. C. MCBURNEY presented a patient with the following history: H. T., aged thirty-two, was admitted into St. Luke's Hospital on February 1, 1887. He had a large left inguinal reducible hernia of three years' standing. The operation was performed on February 7th. The sac was found to be congenital and empty. The canal was split up as far as the internal ring, the sac was tied off at that point, and the wound was treated as in the cases reported in a recent paper by the speaker. (See the "New York Medical Journal" for January 21, 1888, page 57.) On April 4th the wound was entirely healed, and the patient was discharged on May 4th without a truss. The speaker referred to the paper which he had read at a meeting of the society on December 28th, entitled "The Radical Cure of Hernia, with Especial Reference to the Open Treatment of the Operation Wound," and explained that the present patient was No. XI of the series, whom he had been unable to trace up to that time.

In reply to questions by Dr. Wyeth, the reporter said that he had divided the anterior wall of the canal from the external to the internal ring. All of the tissues on one side of the wound were sewed together, and then all of those on the other side, so that the canal necessarily became filled by cicatricial tissue.

Dr. Sands asked if the patient had been engaged in hard work since the operation, in order that the permanency of the cure might be tested.

Dr. McBurney replied in the affirmative, and added that the patient had been especially told not to wear a truss, as the pressure made by a truss was apt to cause thinning of the cicatrix.

Outward Dislocation of the Knee; Recovery, with Perfect Use of the Limb.—Dr. W. T. Bull showed a patient who had received a severe blow on the inner side of the knee while wrestling, causing outward dislocation of the tibia. It was reduced under ether by flexing and bringing the tibia forward. After reduction it was found that the internal lateral ligament had been torn. The patient was treated for six weeks at the Chambers Street Hospital, and when discharged he had a stiff joint, but now (three years and a half after the accident) its function was perfect, and the muscular development of the leg was normal. It was interesting to note such a good result after this somewhat rare lesion. (The case was reported by Dr. Jessup in the "New York Medical Journal" for January 3, 1885, page 12.)

Dr. McBurney asked if the patient had been at work since the accident.

Dr. Bull replied that he had probably resumed his duties as an engineer soon after he left the hospital.

Dr. McBurney suggested that after such an injury flexion and extension alone might occur without the actual repair being complete. If a real test of the strength of an injured joint was made, it might be found that it was still weak. Patients with dislocation of the shoulder might recover and after several months have a fresh dislocation, showing that the normal condition of the joint had not yet been fully restored. He said that if the lateral ligament was torn away together with the periosteum, firm union might result.

Dr. Bull said that it had been impossible to ascertain exactly. He said that the case was of peculiar interest as regarded the question of prognosis in cases of rupture of the internal lateral ligament. He would expect that the joint would always be weak, and that there would be some lateral motion. He always treated cases of rupture of the lateral ligaments with apparatus for at least six weeks, since for union of the torn ligament as much time was required as for union of bone.

Two Cases of Exsection of the Astragalus for Caries; Recovery with Good Motion.—Dr. Wyeth showed a patient upon whom he had operated two years and a half before, removing the astragalus, the lower end of the tibia and fibula, and a portion of the os calcis. Fixation of the bones was obtained by means of a long steel drill, which extended up into the tibia. In this case the disease affected the astragalus, the articular surfaces of the tibia and fibula, and the calcaneo-astragaloid articulation, but was probably not tuberculous. The patient made a good recovery, and was able to walk perfectly well.

The second case was that of a patient (a young man) upon whom he had operated a year before for tubercular osteitis of the astragalus. In this case the posterior planes of the scaphoid and cuboid bones were removed and, as in the preceding case, the upper surface of the os calcis was chiseled off. The patient had not been allowed to walk very much, and the recovery was perfect.

In reply to a question by Dr. Sands, the reporter stated that the disease had begun in the astragalus in both instances; in the last case the astragalo-scaphoid articulation was involved.

Dr. R. Abbe asked if it was easy to remove the astragalus entire.

Dr. Wyeth replied that he had removed it piecemeal with a common chisel, as by this method the operation could be easily done through a small incision.

Dr. McBurney asked if the disease was so extensive as to justify the removal of so much bone.

Dr. Wyeth replied in the affirmative.

Division of the Brachial Plexus; Suture of the Divided Ends.—Dr. Sands presented a patient with the following history: John S., aged twenty-one, single, a painter by occupation, accidentally stabbed himself above the middle of the left clavicle on November 29, 1887. Profuse bleeding followed, but it was readily checked. Immediately after the injury many of the muscles of the left arm became paralyzed. Some hours later the patient began to experience burning pain in the first three fingers of the corresponding hand. He was admitted into the Roosevelt Hospital on December 17th. There was a cicatrix an inch and a half long on the left side of the neck, extending along the outer margin of the sterno-mastoid muscle; the artery pulsated beneath it. There was loss of reaction to the faradaic current, and the galvanic showed An C C > K C C, the affected muscles being the deltoid, biceps, coraco-brachialis, and supinator longus. There was loss of faradaic reaction in the infraspinatus, pectoralis major, and extensor carpi radialis longior, but no change in the galvanic. Sensation seemed to be diminished over the skin-area supplied by the musculo-spiral and circumflex nerves. On December 24th the brachial plexus was exposed by making a V-shaped incision, one branch of which extended along the outer edge of the sterno-mastoid, the other along the upper border of the clavicle. The clavicle was then sawed through, and the plexus was reached after long and tedious dissection. The external jugular vein was accidentally divided, and a small amount of air entered it, but no harm resulted. The large vessels were felt, but were not seen. It was found that the external bundle of nerves, which appeared to be derived from the fifth and sixth cords, had been divided just above the clavicle; at the point of division the bundle had divided into three parts, and two of the lower ends had retracted below the clavicle, where they were included in cicatricial tissue. The divided ends were freshened and brought into apposition by means of four catgut sutures, which were passed directly through the nerve-substance. The sawn clavicle was then wired, and the arm was secured across the chest with a plaster-of-Paris bandage, the head being also fixed. On January 1st the plaster splint was removed. On the 7th the patient had some pain in the fingers; the wound had healed, with the exception of a small sinus. On the 10th the wire was removed from the clavicle. On the 18th the patient had had no pain for some time; his forearm was kept in a sling, galvanism being applied daily. A careful examination of the affected muscles showed that the natural reaction was returning; there was no response to the faradaic current, while the galvanic showed K C C > An C C. The patient could use his arm no better than before, but would doubtless improve. The reporter stated, in conclusion, that Schede had practiced division of the clavicle in removing cancerous glands from the neck. It caused no mutilation, and gave much additional room. Dr. Markoe had reported a similar case, in which a child had suffered injury of the fifth and sixth nerves at a point higher up in the neck. In reporting this case before the society, Dr. Markoe had referred to the great difficulty attending the dissection. His patient had improved, but not until after some time had elapsed.

Dr. Abbe referred to a case that he had reported two months before, in which he resected an inch and a quarter of the musculo-spiral nerve and sutured the ends with silk. There was no improvement at the end of six weeks.

Dr. Sands said that this was too soon to expect improvement.

In reply to a question by Dr. Wyeth, Dr. Sands said that he preferred to use catgut in suturing nerves, because it did not act as a foreign body within the nerve.

Dr. Wyeth said that when there was much tension he preferred to use silk

Dr. Abbe remarked that the nerve-sheath was strong, and could sustain a good deal of tension.

Dr. Wyeth cited the case of a patient, whom he had seen in consultation, who had had paralysis resulting from the pressure of a callus after fracture. After removal of the callus, the function of the limb had been restored.

Dr. McBurney did not think that silk sutures would hold any better than catgut.

Dr. Wyeth had found that catgut was apt to become softened, so that the knot slipped, especially when even slight tension was made on it, and therefore, when accurate coaptation was demanded, he gave preference to iron-dyed silk sutures.

Acute Meningitis following Otitis Media Purulenta.—Dr. Abbe exhibited a portion of a temporal bone, and narrated the following history: Two weeks before, the patient (a boy of seven years) had suppurative otitis media, with a temperature of 103·5° F. on the third day. There were œdema and tenderness over the mastoid process. On the fourth day pus was discharged from the ear and the temperature fell to normal, the œdema disappearing. Thirty-six hours later the discharge ceased, the fever returned, and the patient became delirious, so that a cerebral complication was suspected. At the end of a week the patient had a mild typhoidal delirium at night, his sight failed, and there was slight ptosis on the side of the recent ear trouble; choked disc was marked. The pupils were evenly dilated and responded to light. There was hyperæsthesia of the left arm and leg, with tender spots over the body. The mind remained clear until the end of the twelfth day. As the symptoms seemed to point to abscess, an exploration was advised, but the family would not consent. The autopsy revealed purulent meningitis of the base of the cerebrum and the lower surface of the cerebellum; there was no evidence that the pus had extended from the ear, there being none within the middle ear, although the tympanum was perforated. The internal auditory canal showed streaks of pus following the course of the nerve.

Dr. Sands thought that the history of the case furnished a clew to the diagnosis. Purulent meningitis most often followed suppuration of the middle ear.

Dr. J. D. Rushmore asked if there was double choked disc.

Dr. Abbe replied that he had only been able to make it out clearly in the eye of the affected side.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of February 2, 1888.

The President, Dr. Thomas M. Drysdale, in the Chair;
Dr. J. M. Baldy, Secretary.

Non-papillary Intraligamentous Cysts.—Dr. B. F. Baer showed a specimen and gave the history of the case. The tumor in the right broad ligament had been enucleated entire, but only the lining membrane had been removed from the left ligament.

Sessile tumors, the speaker remarked, whether cystic or solid, were always more or less dreaded by operators, because of the greater difficulty and danger attending their removal, and also because, in the case of sessile cysts, the result as to the permanent relief of the patient was less certain than where the tumor had a pedicle. Clinically and pathologically, therefore, these cases were of great interest and importance. Pain and hæmorrhage were the important subjective symptoms. The former was usually present, sometimes in great severity; the latter was at times alarming, in the quantity of blood lost, and in the frequency of its recurrence. This was not surprising, considering the close relation which these tumors sustained to the uterus and to the other pelvic organs and tissues. The wedging and pressure which resulted from the growth of the tumor in a limited space produced great congestion of the blood-vessels from stasis. The uterus became enlarged and softened in consequence, and metrorrhagia followed; but the hæmorrhage was conservative to a certain degree, in relieving the distended vessels, probably averting rupture of a vein in the broad ligament or in the tumor. The pain which resulted from the tension and stretching of the nerves involved was also relieved or modified by the depletion attending a free hæmorrhage from the womb. But the flow, once started, did not always remain within the conservative line; it sometimes became uncontrollable and resulted in acute and serious anæmia. According to Doran, sessile cysts which arose from the hilum of the ovary or from the Wolffian relics in the broad ligament were usually papillomatous; but that non-papillomatous sessile cysts infiltrating the broad ligament were not infrequently met with was shown by a statement quoted from that author. Further, the ordinary pedunculated multilocular cyst of the ovary sometimes contained papillomatous growths, the result, possibly, of stray Wolffian relics. The speaker had presented at least one such specimen to the society, and had seen others. On the other hand, the multilocular ovarian cyst without papillomatous material had been found, in rare instances, to have invaded the hilum and the broad ligament in its growth.

The case now reported was that of Mrs. X., who had been sent to the speaker by Dr. O. H. Adams, and had entered his private hospital in April, 1887. She was thirty-two years of age, and had had three children, the last two (twins) eight years before. Following her last labor she had puerperal mania, which led to her confinement in an insane asylum for four months. Four years ago she began to have attacks of sharp pain in the right ovarian region, radiating to the groin and down the anterior portion of the thigh. The pain was intermittent in character and cramp-like, lasting hours at a time, and was usually followed by a purulent, fœtid discharge from the vagina, which afforded her great relief. At other times the attack ended with a profuse metrorrhagia, which left her pale and weak, but free from pain. About two years before coming under the speaker's care she first noticed a lump in the right groin, which gradually increased in size. Some time after she noticed a similar growth above the left groin. She was considerably emaciated, and looked very ill. Examination revealed a tumor as large as a child's head in the right iliac region, and a smaller one in the left ovarian region. The tumors seemed to be fixed in the pelvis, and to have a broad base of attachment. They were immovable below, but mobile above and semi-fluctuating. Vaginal examination showed them to be so deeply attached in the pelvis and so intimately related to the uterus that he was unable to complete the diagnosis without anæsthesia. The patient was therefore placed in bed and ether administered, when it was found that the uterus was elevated by the tumor on the right side, with which it was connected. There was evident fluctuation, though the tumor was thick-walled and very firm, almost hard. The lower surface occupied the position of the broad ligament at the side of the uterus. The same condition existed on the left side, but to a lesser degree. He diagnosticated sessile cystic disease of both ovaries or broad ligaments, and advised an immediate operation. On April 13th he operated with the assistance of Dr. Daniel Longaker. When the tumors were exposed they were found to be so closely connected with the womb that they seemed to be one mass with that organ, which rested like a wedge between them. The Fallopian tubes extended outward over the upper surface of the tumors, while the broad ligaments and the greatly distended veins of the pampiniform plexuses were expanded so as to apparently envelop them, the whole presenting a dark, purple appearance which was not at all reassuring. After separating some slight adhesions on the posterior aspect of the larger tumor and rolling it forward, the nacreous surface common to the multilocular ovarian cyst was exposed to view. Selecting a spot on this free surface, because it was less vascular, he plunged a trocar into it, when about two pints of a tarry-looking fluid drained away. A more thorough investigation, which the diminished size of the tumor now made practicable, showed it to be adherent to the cæcum also. Before beginning the enucleation, he passed a long blunt needle armed with a double ligature through the expanded broad ligament at its least vascular portion, between the uterus and the tumor and as far below the Fallopian tube as could be done with safety. One side of the ligature was then drawn up and tied close to the uterus, including within its grasp the tube and vessels. Thus insured against hæmorrhage from that source, he cut through as far as the ligation extended and continued the enucleation down to the base of the tumor, and then outward, finally separating it from the head of the colon. There was some bleeding from the numerous veins which were broken, but this was readily controlled with catch forceps and ligatures. Attention was now given to the tumor on the left side. This was found to be deeply imbedded in the pelvis and firmly fixed to the uterus, the Fallopian tube, the descending colon, and the rectum. The upper surface was covered with a network of distended veins, some of them as large as a quill. Enucleation of this tumor seemed too hazardous, and hysterectomy was out of the question, for to do the latter the tumor must first be dissected from the colon and the pelvic floor, which was not practicable. He determined, therefore, to remove the contents of the cyst by aspiration and then to shell out the lining membrane, or, failing in this, to insert a drainage-tube into it. But, while he was endeavoring to find a portion for puncture, his finger passed into the tumor low down on the posterior border of the broad ligament. Instantly the parts were flooded with a tar-like, semi-fluid substance similar to that which had been removed from the cyst on the right side. This was removed as quickly as possible by sponging. He then passed his finger through the opening which he had thus accidentally made, and, after a careful and gentle dissection, succeeded in removing the entire secreting surface of the cyst. Blood was now flowing from the small valvular opening in the broad ligament, but, as it was apparently venous, he hoped to check it by compressing the now flaccid folds of the broad ligament. For this purpose several large sponges were inserted and external pressure was made upon them while the abdominal sutures were being placed. The sponges were then removed. There was still a slight flow of blood, but, as it was doubtless only a venous oozing, he concluded to close the wound and trust to pressure and the drainage-tube. The patient was placed in bed and the tube carefully watched. During the next two or three hours several teaspoonfuls of quite bloody serum passed through it; after forty-eight hours the tube was removed. The patient made a slow but good recovery, and went home six weeks after the operation. She was entirely relieved of her former sufferings, and her weight and strength were regained.

Splenectomy.—Dr. William Goodell reported the case of Mrs. R., forty years old, who had had malarial fever in early life, but after her marriage, eighteen years ago, went to live in a healthy country town, and had had no return of the disease. She had two children. At the birth of the younger one, seven years ago, she had serious flooding and was confined to bed for six months from excessive prostration. Since that time she had never been well, being weak and miserable. Her monthly periods were always free and generally painful. Last March she had a very severe attack of what her physicians called malarial fever, and her life was threatened by repeated attacks of hæmatemesis and hæmoptysis. A sore tumor was now discovered, which was pronounced to be a uterine fibroid, and she was sent to the speaker. He found the womb pushed low down and retroverted by a solid tumor, which started from the region of the right ovary and ran diagonally toward the splenic region. It entered the pelvis so low as to cause bulging of the anterior wall of the vagina. The womb seemed to be independent of the tumor, for the former could be moved about freely with the sound. Yet, when the tumor was pushed upward, it conveyed motion to the womb, drawing it also upward. The patient was never free from pain in the tumor, and her complexion was markedly cachectic. The diagnosis was made of sarcoma, either of the right ovary or of the omentum. At the operation a very long incision was needed, reaching not quite up to the ensiform cartilage. The tumor was of a dark-purple color and was attached in every direction by very long, tortuous, and wholly denuded vessels, which looked like the largest earth-worms and were of analogous length. Most of the vessels came from the omentum, which had disappeared, apparently by being incorporated with the tumor and by having its connective tissue and fat removed by absorption, leaving the blood-vessels bare. These vessels were either single or else grouped in large bundles, and had all to be ligated. By them the tumor had evidently been nourished, for what looked like a pedicle was slender, long, and twisted. It was lost in such a mass of livid veins that the speaker did not dare to follow it up to its source. He was so uncertain of the diagnosis that he sent the specimen to Dr. Formad, who pronounced it a leukæmic spleen. It weighed not quite six pounds. The woman did well for four days; then symptoms of embolism set in, the sputa became streaked with blood, and she died on the sixth day. So far as he could learn from the literature on the subject, his case made the eighteenth in which a leukæmic spleen had been removed, and all the patients had died save one.

Dr. R. P. Harris said that the case of recovery after the removal of a leukæmic spleen had occurred under Dr. Franzolini, of Italy. The proportion of leucocytes was small, which probably accounted for the recovery. The diagnosis had been made before the operation.

Dr. Parish had a few years ago seen a case of the late Dr. Wallace's in which a diagnosis of fibroid of the uterus had been made. A tumor the size of the two fists was found near the side of the uterus. The patient developed peritonitis and was tapped by the assistant physician. Some dark fluid was withdrawn. Death took place a few months after, the peritonitis having been cured. At the autopsy the spleen was found adherent to the uterus and to the pelvic brim.

Dr. Goodell called attention to the hæmoptysis and hæmatemesis in his case, which were the usual symptoms of a leukæmic spleen; but he had not been informed of them until after the operation, and therefore had not had that clew to a diagnosis.

(*To be concluded.*)

ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

Fourth Meeting, held in New York, January 18, 1888.

The President, Dr. William H. Baker, of Boston, in the Chair.

The Use of the Vaginal Tampon in the Treatment of certain Effects following Pelvic Inflammations.—Dr. Thomas Addis Emmet read a paper on this subject (see page 169).

Dr. Bache McE. Emmet would make a distinction between the active tampon and the passive, so to speak. In general, he had observed nothing but benefit from the use of cotton pledgets, elevating the uterus, making pressure on the lymphatics and blood-vessels, and supporting displaced organs in whatever position he might have placed them, but he realized how much harm might come from the active tampon, from injudicious pushing and stretching of fibrinous bands within the pelvis. He thought that as much injury might be produced by the forcible manual overstretching of adherent bands and fibers in replacing, for instance, the uterus from a state of retroversion to that of the normal anteversion, as by the use of the Simpson or Peaslee sound for the same purpose. This implied degree of force was not of necessity brought to bear in using the tampon for *progressive* pressure; yet, as the immediate results were proportionate to the violence applied, one might be led to make too free use of one's power, and so to frustrate one's plan of progress, by creating an activity of resistance in parts which before had been indolent and inert. To consider how far this mode of treatment might prove serviceable, it was essential, in the first place, to define accurately those inflammations which might properly be subjected to it, and, in the second place, to make sure of the correctness of the diagnosis in each individual case at the time of applying the treatment. He had never made use of the tampon in the treatment of actual pelvic inflammation, but only to do away with its remains and to overcome its effects. In the acute inflammation the element of rest must enter so largely into the consideration of the case that this treatment was practically contra-indicated. Were it practicable to apply such a method at the very inception of a lymphangeitis, and so bring pressure to bear that effusion could scarcely find its place, undoubtedly good might be accomplished; but that was not the case as a rule. Such inflammations were rarely seen in that very early stage, and, even if they were, the use of hot water was a still better means. From the force with which it could be applied, it might be considered to exert actual pressure, besides which it supplied the astringent effect in the most simple and efficient way, which could only be approached with the tampon by the aid of medicated pledgets. There were many chronic cases in which such a mode of treatment would seem inapplicable also, in which, as a matter of fact, almost all treatment was inapplicable or uncalled for. If physicians recognized such cases accurately at the outset, and applied treatment only in such of them as called for it, they would spare themselves an infinite amount of useless labor and the patients much suffering and expense. There were many cases in which, for one reason or another, some exudation was found in the pelvis, either in a mass or in shreds, which had displaced or was binding down the uterus or one of the annexa. This condition was often entirely harmless and quiescent, and one would be greatly at fault to attack it and thus inaugurate a period of treatment which might never come to a satisfactory end. Even where it was recognized that the old effused material was at the bottom of a positive harm, that it had impaired the usefulness of an ovary or distorted and bound down a Fallopian tube, it was not always judicious to proceed by any active stretching or tearing of these adhesions to restore the parts to their normal position or freedom, although the majority of the cases would call for just this treatment. The cases in which he would specially advise against this forcible mode of treatment were those in which there was reason to believe there was either a marked tendency to acute pelvic inflammation, which might aggravate the existing condition; a fullness of the hæmorrhoidal vessels, as indicated by puffiness or throbbing, from which it might be deduced that the effused material was also well supplied with blood, in which case there would be reason to fear rupturing the vessels, and so producing hæmatoma or hæmatocele; and, lastly, those in which there was pyosalpinx, and rupture of the cyst with its evil consequences was to be feared. But the benefits to be derived from gentle, gradual pressure and displacement, he believed, far outweighed the possible harm. It was not to be doubted that by this persistent passive pushing and crowding, combined with the counter-irritant treatment, the dislocated and crippled organs of the pelvis might be fully restored and made useful. The evidences of dysmenorrhœa overcome, of locomotion improved, of an active life restored, were too many to justify withholding from this plan of treatment the full measure of credit. The influence upon the distended blood-vessels attending displacements of every variety consequent upon pelvic inflammation, the soothing effect upon the nerves within the pelvis induced by relief of this congestion, and the improved well-being of the woman, with, at the same time, the normal reposition of the organs, amply attested the value of the practice, and he felt certain that similar results could not be produced by the use of hot water and counter-irritation alone.

Dr. Henry C. Coe said that the subject of pelvic inflammation was one that had interested him ever since he began to study gynæcology, not only because of the complicated anatomical questions involved, but by reason of its important bearing on every gynæcological manipulation and operation. The careful specialist never examined a patient without asking himself whether an inflammatory complication existed which might not only explain the symptoms, but also modify the results of an operation. The speaker had expressed his views on the subject of chronic pelvic inflammation in a paper read before the association at its first meeting, and more recently had considered the use of the tampon in the treatment of the adhesions resulting from such inflammation. Our ideas regarding the treatment of pelvic inflammation must naturally be modified by our views of its essential nature. Any system of therapeusis based merely on tradition, for which we could offer no sound pathological reason (valid to ourselves, at least), we could not defend with any degree of enthusiasm. Many of us used the tampon in treating pelvic inflammation as a matter of routine, without expecting any special results. This skepticism doubtless prevented us from giving it a fair trial in a given case, and led us to attribute its good effects to other treatment. The speaker acknowledged that this was the tendency with himself. It seemed to him desirable to exclude from the discussion the use of the tampon as a mechanical force applied for the purpose of stretching old adhesions, the result of former inflammation. He did not regard such adhesions as "pelvic inflammation" proper any more than the firm bands which resulted from pleurisy could be termed an active inflammatory process. He would limit the subject to the use of the tampon as an antiphlogistic. It was commonly stated that, in cases of venous congestion accompanying descent of the uterus below its normal plane, by elevating the organ by means of tampons we supported or diminished the tension on the dilated and elongated veins, and thus relieved the congestion. The same theory was applicable to venous engorgement attending pelvic inflammation. In fact, Dr. Hardon ("Virginia Med. Monthly," May, 1887) believed that most of the indurations at the bases of the broad ligaments formerly known as "cellulitis" were simply dilated veins, which ceased to be felt with the examining finger as soon as the uterus was elevated by means of tampons. The speaker was convinced that there was much truth in this idea. Did we relieve pelvic congestion by elevating the uterus with tampons? The evidence was entirely clinical, since observations on the living subject were impossible, except at the operating-table, where the conditions were unfavorable to experiments. Within a week he had performed autopsies in two companion cases of endometritis and peritonitis following operations upon the cervix. The pelvic veins were in a state of intense engorgement, especially the plexuses within the broad ligaments. The uterus in each case was small (2¾ inches in depth) and retroverted, but had descended little, if any, below its normal plane in the pelvis. Careful bimanual palpation of the broad ligaments was practiced before and after the abdomen was opened, but no resistance could be felt at any point. The uterus was raised to the highest possible point by pressure made through the vagina. The broad ligament and its contained veins were elevated to only a slight extent, certainly not sufficient to change the direction of the veins or to materially relieve the congestion in the living subject. It seemed to him a mistake to speak of these dilated veins as if they were actually drawn out of their normal relations in cases of uterine displacement. The vessels in the broad ligaments, if displaced at all, were displaced *en masse*, together with the ligaments and their other contents, their relative relations not being disturbed. But there is another alleged virtue possessed by the tampon in addition to the mechanical support offered to the dilated pelvic vessels; we may call this the alterative. It depended upon the supposed power possessed by glycerin, or boro-glyceride, to cause softening or absorption of the products of pelvic inflammation. He must confess that he had under observation cases in which he had waited for months for a tangible manifestation of this resolvent action. The whole theory of the action of glycerin tampons seemed to him to rest on a false conception of the anatomy of the parts—*i. e.*, that the circulation in the vast system of venous plexuses lying deep within the pelvis could be materially modified by a local application which must act through the thick vaginal roof and layers of connective tissue and peritonæum, each of which had its own system of blood-vessels. Enthusiastic believers in the virtue of medicated tampons might satisfy themselves that under their use inflammatory masses were dispersed, but could they be sure that these effects (if they really occurred) were not due rather to the routine use of hot water? In order to settle this point, a certain number of cases should be selected, some being treated with iodine applications alone, others with medicated tampons, and a third series with hot-water injections. Then let the results be compared. There was urgent need of collective investigation in this society. The plan adopted in the French Academy of Medicine of referring disputed questions to a committee would be an admirable one to adopt. It seemed to him that this was the true way to correct errors and bring out the real value of a given theory. With regard to the technique of tamponing, in order to accomplish the desired result the tampon must remain in contact with the cervix and vaginal roof for a considerable period. Did it do so? Possibly, if the patient remained in bed, but he was sure that in many of the cases treated at offices and clinics the patient did not walk a block after treatment without displacing the tampon. The natural contractility of the vagina in nulliparæ and the laxness of its walls in multiparæ tended to favor dislodgment of the cotton from its position against the fornix. He had frequently inserted a large, firm tampon with great care, and the patient had informed him at her next visit that it had "come down" before she reached home. One could satisfy himself of this by causing a patient to walk about a little after being tamponed, and then examining her again. Of course, if a large, firm tampon was inserted, as in cases of hæmorrhage, this might be prevented, but here we applied another principle. The speaker did not wish to be understood as pronouncing the vaginal tampon an entirely useless agent in the treatment of pelvic inflammation. He always used it—so did every gynæcologist, with greater or less thoroughness and conscientiousness, according to his faith. He would like to be convinced, but found it rather difficult to entirely reconcile facts and theories.

Book Notices.

The Intestinal Diseases of Infancy and Childhood. Physiology, Hygiene, Pathology, and Therapeutics. By A. Jacobi, M. D., President of the New York Academy of Medicine, etc. Detroit: George S. Davis, 1887. Pp. xv–301. [Physicians' Leisure Library, No. 5, 1887. Price, 25 cents.]

Before proceeding to what we have to say of this particular book, we will venture to express our sense of the obligation under which the profession rests to the publisher for having brought out the handy series of volumes of which it forms one, and our appreciation of the judicious selection of authors made by him.

To most of our readers we need say nothing of Dr. Jacobi's attainments as a physician, of his enormous experience in pædiatrics, or of his excellence as a teacher; it is known everywhere that, as concerns all these matters, he is excelled by none of our American writers. As to the importance of the intestinal diseases of children, that subject, too, is thoroughly appreciated by every family practitioner. We wish we could add that all physicians recognized the immense superiority of correct methods of preventing those diseases over the prescription-monger's plan of subduing them. To inculcate this superiority, to force it home upon the reader's reason, is the great end which the author has had in view evidently in the preparation of this work; and we can not admit the possibility of its failing to accomplish that purpose. The book will be read very widely, and we are convinced that it will be the means of saving many lives. It must not be inferred from the prominence we have given to that aspect of the work which relates to prophylaxis that it is a mere disquisition on that topic; it is a condensed systematic treatise on the digestive diseases of children, their pathology, ætiology, diagnosis, prognosis, and treatment. As such we heartily commend it to our readers.

Insanity: Its Classification, Diagnosis, and Treatment. A Manual for Students and Practitioners of Medicine. By E. C. Spitzka, M. D., President of the New York Neurological Society, etc. New York: E. B. Treat, 1887. Pp. 17 to 423. [Price, $2.75.]

As many of our readers are aware, the author of this work has given much study to the anatomy of the central nervous system, and the book reveals his predilection for that field. But he is not carried away by an extravagant estimate of its importance. "Let him" [the reader], he says, "bear in mind that the majority of the symptoms of insanity are merely excesses or deficiencies or perversions of functions—excesses, deficiencies, and perversions whose very existence implies that their organic basis must be *anatomically* intact. He will then recognize the futility of searching for coarse formative changes in such subtle affections as most of the simple primary psychoses are." This is exceedingly sound talk, in which every broad-minded alienist will bear the author out. It is a wholesome protest against the rough, ultra-materialistic conceptions of mental pathology that have dominated alienists of the "imitative" type for a long time.

The chapters on monomania and paretic dementia are particularly full and satisfactory, and the discussion entailed furnishes entertaining reading for those who are fond of psychological analysis. Our general impression of the book is that it constitutes a solid mark of the author's industry, intelligence, and sincerity of purpose, and that it can not fail to prove instructive to all who read it.

An Index of Materia Medica, with Prescription-writing, including Practical Exercises. By Charles H. May, M. D., Instructor in Ophthalmology, New York Polyclinic, and Charles F. Mason, M. D., Assistant Surgeon, U. S. Army. New York: William Wood & Co., 1887. Pp. vi–267.

This little book is a good one of its kind, and fully bears out its title of "Index." In the matter of doses—always one of importance in a work of the sort—any errors it may contain are on the side of safety.

BOOKS AND PAMPHLETS RECEIVED.

Synopsis of the Second Hundred Cases of Urethral Stricture treated by Electrolysis. By Robert Newman, M. D., of New York. [Reprinted from the "Journal of the American Medical Association."]

Report on the Mortality and Vital Statistics of the United States as returned at the Tenth Census (June 1, 1880). By John S. Billings, Surgeon, U. S. Army. Part II, with Plates and Diagrams. Washington: Government Printing-Office. Pp. clviii–803.

Chemical Analysis of Healthy and Diseased Urine, Qualitative and Quantitative. By T. C. Van Nüys, Professor of Chemistry, Indiana University. With Thirty-nine Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. x–17 to 187. [Price, $2.]

The Treatment of Intermittent Fever. By Robert C. Kennen, A. M., M. D. [Reprinted from the "American Practitioner and News."]

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F. R. C. S., Consulting Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, etc. With Ninety-six Illustrations. Third Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xv–240. [Price, $2.]

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the Ninth. Philadelphia: Printed for the College, and for sale by P. Blakiston, Son, & Co., 1887. Pp. cdlxxiii–203.

The Three Ethical Codes: The Code of Ethics of the American Medical Association, its Constitution and By-laws. The Code of Ethics of the American Institute of Homœopathy. The Code of Ethics of the National Eclectic Medical Society. Detroit: The Illustrated Medical Journal Company, 1888. [Price, 50 cents.]

Nineteenth Annual Report and By-laws of the New York Physicians' Mutual Aid Association.

College of Physicians and Surgeons in the City of New York; Medical Department of Columbia College. Addresses at the Inauguration of the New College Building, September 29, 1887; and of the Sloane Maternity Hospital and the Vanderbilt Clinic, December 29, 1887.

Ueber Dammschutz und primäre Operation des Dammrisses. Von Dr. C. A. von Ramdohr. [Aus der "New Yorker medizinische Presse."]

The Significance and Localization of Pain in Pelvic Diseases. By Henry C. Coe, M. D. [Reprinted from "Gaillard's Medical Journal."]

The Use of the Curette for the Relief of Hæmorrhage due to Uterine Fibroids. By Henry C. Coe, M. D. [Reprinted from the "Medical Record."]

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

A Case of Complete Self-enucleation of Both Eyeballs.—Fulton ("Amer. Jour. of Ophth.," July, 1887) reports a case of extreme rarity occurring in a man, aged thirty-eight, who, while on a prolonged debauch, inflicted the following injury upon himself: Both eyeballs were torn from their sockets, and were hanging loose in the conjunctival sac. The cornea of each eye had begun to slough. The lids were contracted behind the eyeballs. The conjunctiva was swollen, thickened, and infiltrated. The patient had simultaneously thrust both thumbs into the external canthi of both eyes and had gouged out the eyeballs. The recti muscles were all torn loose, and the optic nerves seemed to have been snapped off close to the commissure.

An Operation for the Relief of Trichiasis.—Jacobson ("Ctrlbl. f. prakt. Aug.," July, 1887) describes still another operation for the cure of trichiasis. He first makes an intermarginal incision like that employed in the Jaesche-Arlt operation. He then excises a piece of skin (thin flap), usually from the temporal end of the intermarginal incision, either vertically upward or downward from the skin of the face, or in an obtuse angle from the skin of the temple, or from the skin of the lid. When the skin has been dissected free for about 4 mm. from the point, a fine curved needle armed with a silk suture is introduced from the skin surface, and the point is then dissected free or divided. The flap is then carefully inserted in the intermarginal incision by means of the suture, and its point is stitched into the nasal angle. The same needle fastens the upper margin of the flap at three points toward the points of exit of the cilia, while a larger needle fastens the lower margin of the flap at three points toward the free margin of the cartilage. The wound in the skin is then closed and an iodoform dressing applied. Borated lint, gutta-percha paper, absorbent cotton saturated with boric-acid solution, and a double bandage are applied over both eyes, and the bandage is not removed for three days. The dressings are then removed from the sound eye, but the operated eye is kept closed for six days longer.

Disease of the Roots of the Hairs in Blepharitis Ciliaris; the Causation and Mode of Cure.—Roeder ("Kl. Mon. f. Aug.," July, 1887) has been investigating the subject of disease of the hair-bulbs in various parts of the body, especially in blepharitis ciliaris, and finds that in the latter class of cases it is intimately connected with disease of the lacrymal passages. He has found that as long as there is no purulent secretion from the lacrymal sac, the cilia remain healthy, but that with the appearance of blennorrhœa of the sac, blepharitis also makes its appearance. So constant is this connection that the existence of stenosis of the lacrymal duct and blennorrhœa of the sac may be inferred from the presence of blepharitis ciliaris. If in simple stenosis of the duct the tears collect on and between the lashes, the fat excreted from the sebaceous glands of the hair-bulbs prevents the entrance of these tears into the hair-follicles. But if pus cells are mingled with the tears, a fatty emulsion is formed which readily neutralizes the resistance of the fat of the sebaceous glands, and enters the hair-follicles. The hairs swell up, and the inner hair-follicle becomes filled with pus cells; the entrance into the follicle becomes closed. The pus within subsequently makes its way out by ulceration, and forms thick crusts between the lashes. The latter, together with the inner sheath, are cast off, and a young hair is developed. The suppuration causes cicatricial contraction of the entire follicle. The sebaceous glands become gradually obliterated as well as their channels of exit, and the hair-bulbs become dry and hard. In view of all these facts, it is indispensable to a perfect cure that the disease of the lacrymal sac and duct should first be permanently cured.

New Method of Operation in Squint.—Motais ("Rev. gén. d'ophthal.," June 20, 1887) recommends the following procedure: The conjunctiva is first to be incised and very extensively dissected free from the underlying tissue. The tendon and capsule are then to be seized with toothed forceps and opened near the median portion by a cut with the scissors. The points of the scissors are first introduced between the upper border, then beneath the lower border of the tendon, and the latter thus entirely divided. If a still greater recession of the tendon is desired, he introduces one blade of the scissors between the sclerotic and the capsule, and the other between the capsule and the conjunctiva, and separates the capsule from its anterior attachments throughout the necessary extent. The posterior flap of the capsule is drawn backward with the tendon.

Peritomy by Cauterization.—Vacher (*ibid.*) speaks very highly of peritomy by the cautery not only in diseases of the cornea and sclera, but also in some of the deeper affections of the eye. It is a circular cauterization without loss of substance, resulting in a groove in the conjunctiva and subconjunctival tissue, and superficial layers of the sclera, which modifies the intra-ocular circulation and the pain by complete division of the blood-vessels, lymphatics, and nerves. Vacher employs the galvano-cautery, using a very fine platinum wire. The results are diminution of pain, hypotonus, and profound revulsion which is preferable to the ordinary conjunctival abrasion. The operation is of easy execution and entirely without danger. Its action is prompt and energetic. It never causes flattening of the cornea, and never leaves a deforming scar. It is very useful in iritis and episcleritis.

The Pupil Symptoms met with after Injuries to the Head.—J. Hutchinson, Jr. ("Ophth. Rev.," May and June, 1887), continues his remarks upon this subject. He refers to the grave importance of non-sensitive and dilated pupils as a symptom of compression of the brain after head injuries. During the first onset of middle meningeal hæmorrhage the pupils may still react to light. While double dilatation may be a symptom materially affecting the prognosis, fixed mydriasis on one side only may, with strong probability, be taken to indicate that the hæmorrhage is occurring on the same side as that on which the pupil is affected. When a meningeal hæmorrhage detaches the dura mater, it undoubtedly extends downward toward the base as well as upward. But, owing partly to the numerous foramina in the floor of the middle fossa to which the dura mater is firmly attached, the clot finds increasing difficulty in forcing up that membrane, and cases in which the blood has actually reached the neighborhood of the cavernous sinus are very rare. Hence the pressure on the third nerve must be exerted indirectly through the crus cerebri and a considerable part of the cortex. But the pupil symptom is found to occur before hemiplegia of the opposite side develops, sometimes coinciding with convulsive movements of the arms and legs and rigidity of the opposite side. These symptoms, with dilatation of the pupil, would be at first explained by irritation of the ascending frontal and superior frontal convolutions. Beck's case, reported by Jacobson, seems to show that one-sided mydriasis is not due to pressure on the third nerve, but is probably to be ascribed to pressure on some cerebral center. Compression mydriasis sometimes exceeds that due to complete paralysis of the third nerve due to other causes. Pressure on the trunk of the third nerve will not explain the numerous cases in which double mydriasis is present. Nor will irritation of the superior frontal convolution account for the others in which unilateral mydriasis is present, since the dilatation should be symmetrical and associated with other symptoms. Probably pressure transmitted to the corpora quadrigemina must be taken as the explanation. This will explain why the mydriasis is found chiefly, but not solely, on the same side as the hæmorrhage.

The Lesions of the Cervical Sympathetic.—Three ocular symptoms are to be referred to paralytic lesion of the cervical sympathetic: 1. Inability of the pupil to dilate in a dim light, although it will still respond to atropia. 2. Diminution in the vertical measurement of the palpebral fissure. 3. Slight recession of the globe.

Hutchinson summarizes the chief points in his paper as follows: 1. In most cases of concussion, for a variable time, depending on the severity of the injury, the state of the pupil resembles that met with in ordinary anæsthesia—*i. e.*, slowness in responding to light, without marked myosis or mydriasis. 2. In a small proportion of cases of concussion, temporary mydriasis (on one or both sides) is met with. 3. When inflammatory reaction follows severe bruising of the brain, myosis is the rule. 4. In compression of the brain from meningeal hæmorrhage, mydriasis on the side of the lesion is met with in at least half the cases, double mydriasis occurring next in order of frequency, myosis being very rare. The pupil-symptom here is probably dependent on pressure of the corpora quadrigemina rather than on the trunk of the third nerve. 5. In cases of injury to the cervical sympathetic, active myosis does not occur, but the pupil on the side affected will not dilate in dull illumination.

The Crescent or Conus of the Optic Papilla and Astigmatic Contraction.—Martin ("Ann. d'ocul.," March–April, 1887) begins with the following proposition: The papillary crescent, in the great majority of cases and perhaps in all, is situated at the extremity of a partial contraction of the ciliary muscle, and this contraction is the cause of its appearance and development. The reality of these astigmatic contractions is proved, and it is entirely physiological to admit that this duty devolves upon the radiating fibers, those directed in the meridians of the eye. In an eye possessing this deformity the retina and chorioid undergo a pulling and stretching, which are apt to rupture at the external margin of the optic nerve the deep chorioidal trusses which aid in the formation of the lamina cribrosa, and thus enlarge little by little the chorioidal ring. A similar result is sometimes produced by a pulling of the meridional fibers. Martin concludes that all eyes which possess a crescent are astigmatic, and that the direction of this lesion is always found in a plane parallel to one of the principal meridians, and most frequently in that which presents the lowest refraction.

Treatment of Serpiginous Ulcer of the Cornea.—Dehenne ("Rec. d'ophthal.," April, 1887) gives the following *résumé* of the methods to be employed in treating serpiginous ulcer of the cornea: 1. Incise both lacrymal puncta and canaliculi, and irrigate the lacrymal passages freely with an antiseptic solution. 2. Carefully wash out the conjunctival *cul-de-sac* with an antiseptic solution (sublimate, 1 to 2,000). 3. Cauterize the entire surfrce of the ulceration by means of the thermo-cautery. 4. If there is pus in the anterior chamber, perforate the cornea with the thermo-cautery and evacuate it. 5. Instill into the eye four times a day five or six drops of a neutral solution of eserine sulphate (1 to 2,000).

The Determination of the Degree of Ametropia by Retinoskiascopy.—Zieminski ("Rec. d'ophthal.," May, 1887), in a somewhat lengthy paper on this subject, draws the following practical conclusions: 1. Retinoskiascopy is the name given to that method of objective optometry devised by Cuignet, and to which he gave the name of keratoscopy, and consists briefly in observation of the retinal shadows. 2. The importance of retinoskiascopy is incontestable in numerous cases where other methods of objective optometry do not give sufficiently exact results. 3. The most exact method of determining the degree of ametropia by retinoskiascopy is that advocated by Parent, and consists in the employment of correcting lenses placed in front of the eye of the patient. To render it of practical advantage, we must be enabled to determine approximately by means of the rotation of a mirror the degree of ametropia by simple observation of the phenomena of retinoskiascopy, and only make use of certain correcting lenses for stating precisely the degree of the anomaly. In emmetropia and feeble ametropia the reflection of the illuminated part of the pupil is very bright; the shadow is very faint but well defined; the limit between the illuminated part and the part in shadow of the pupil appears as the segment or arc of a large circle; this limit is almost rectilinear in emmetropia and weak myopia. The part of the pupillary plane in shadow is comparatively much greater in extent than the light part. In moderate degrees of ametropia the reflection of the illuminated part of the pupil is less intense; the shadow is distinct and in the form of a crescent; the difference in extent of the two is not very great. In high degrees of ametropia a large part of the pupil is but slightly illuminated and ill defined; the shadow is very dark and in the shape of a narrow crescent, and during the movements of the mirror this shadow moves slowly across the pupil. 4. To determine the existence of astigmatism, the mirror must be rotated around its vertical or horizontal axis. If the shadow moves obliquely across the pupillary plane, an astigmatism with oblique principal meridians is present. If, on the contrary, the shadow moves horizontally or vertically, the mirror must be rotated round an oblique axis. 5. The plane mirrior is preferable to the concave mirror. 6. Retinoskiascopy may generally be employed without the use of mydriatics.

A New Operation for Distichiasis or Entropium, with the Record of a Few Cases.—W. F. Smith ("Arch. of Ophthal.," xvi, 2) has observed that all the operations for narrowing the external surface of the lid, or for excising a portion of the tarsus, or even for transplanting the ciliary margin, are liable to failure in that they do not correct the abnormal direction or curve of the lashes. These considerations suggested the idea of transplanting a narrow strip of cuticle, without pedicle, in such a manner as to supply to some extent the tissue lost by atrophy at the inner margin of the lid, and in this way lift the lashes away from the globe. The lid is to be split in the usual manner for the operation by Arlt's method, at a uniform depth of 4 mm. It must extend nearly the whole length of the lid, so as to exclude all the troublesome lashes. The plane of the incision is such that while it follows the inner margin of the lid almost within the conjunctiva, its bottom is about midway between conjunctiva and cuticle, the direction being upward and outward nearly at a tangent to the cornea. Two parallel incisions are then made in the skin above the margin of the lid, about 1·5 mm. apart. The cut in the respective ends of the strip of skin made it exactly as long as the slit in the edge of the lid previously made. Before separating the strip of skin from the underlying tissue, a curved needle, armed with finest silk, is passed through the end of the strip from without inward. After drawing the thread partially through, the needle is passed from the bottom of the slit in the edge of the lid, bringing it out through the skin near the canthus. This is done at both ends of the strip. By drawing the threads loosely, the loops of the thread, including the ends of the strip, may be used in the place of forceps, and the strip readily separated from the underlying tissue with a sharp knife, working from extremities toward the center. Having control of the strip by means of the threads, it is easily lifted over the lashes and adjusted within the slit without allowing it to come in contact with any other part. By simply uniting the threads the strip of skin is drawn accurately into the desired position, and one suture passed through its center fastens it snugly in the groove. The operation is completed by stitching together the narrow slit left in the surface of the lid. The stitches are removed on the third day.

Double Glaucoma Simplex in a Child Eleven Years of Age.—Randolph (*ibid.*) reports a rare case of this nature occurring in a young mulatto girl. Her vision has gradually failed for more than a year. During the past eighteen months she had on several occasions complained of pain in the temples and head. She had had no temporary obscurations of vision, nor had she ever noticed the rainbow-colored rings around a flame. No clew found in the family history. Right eye, $V = \frac{6}{36}$; left eye, $V = \frac{6}{60}$. Marked *plus* tension in both eyes. Pupils large and sluggish. Narrowing of the field of vision in both eyes on the nasal side, more especially in the left eye. Media clear. Glaucomatous excavations in both optic discs. Vessels crowded over to nasal side of papilla and disappeared with a sharp bend beneath edge of excavation. Veins tortuous and engorged. Arteries narrow and at points on edge of discs distinctly pulsating.

Syphiloma of the Sella Turcica causing Engorged Papilla, and ending in Complete Recovery.—Reuling (*ibid.*) reports the case of a gentleman, aged forty-six, with complete ptosis of left upper lid, protrusion of both eyes, paresis or paralysis of all the ocular muscles of both eyes, with exception of external recti. Both pupils dilated *ad maximum*, facial expression staring, gait staggering, speech heavy, and frequently disconnected. Media transparent, conjunctiva hyperæmic and chemotic. Vision in each eye amounted to one seventh. Central scotoma in each field of vision. Pronounced neuro-retinitis; both optic discs globular and greatly enlarged. Discs and retinæ dotted with numerous hæmorrhages. No albumin or casts in the urine. Treatment consisted in removing two ounces of blood from each temple, and systematic inunction of mercurial ointment in half-drachm doses into arms and legs, with internal administration of potassium iodide in ten-grain doses three times a day. An improved condition began within twelve hours. He was discharged on the sixth day, with normal motility of both eyes almost entirely restored. The treatment was continued for two months with short intermissions, and at the end of the third month vision was normal and the patient apparently entirely well.

Disturbances of Vision after Employment of the Galvano-cautery in the Nose.—Ziem ("Ctrlbl. f. prakt. Aug.," May, 1887) calls attention to the occasional occurrence of visual disturbance after using the galvano-cautery in the nose, and reports three cases. In the first case, after cauterization anteriorly and posteriorly of the turbinated bones, the patient complained of defective vision in the right eye, and an examination showed $V = \frac{20}{40}$, distinct venous pulsation on right disc, and a narrowing of the field of vision. In the second case, a woman with chronic swelling of the mucous membrane lining the entire nose and a small angeioma at the internal canthus of the left eye, the application of the galvano-cautery to the swollen mucous membrane of the nose caused a fainting spell and collapse of the angeioma, and shortly afterward a failure of vision in the left eye. An examination showed marked venous hyperæmia of the left optic disc. In the third case, a young woman with great swelling of the nasal mucous membrane over the turbinated bones and chronic blepharo-adenitis, the galvano-cautery was applied to the turbinated bones very freely, and almost immediately the patient complained of a sense of fullness and pressure in the left eye, and complained of a dimness of vision. An examination showed a pronounced venous pulsation in the left optic disc.

Visual Disturbances in Diabetes Mellitus; Are they Phenomena of Consumption?—Rolland ("Rec. d'ophthal.," June, 1887) does not believe that amblyopia and cataract are always ultimate complications of diabetes mellitus and signs of bad augury. The number of diabetics who never have any trouble with their vision is, he thinks, extremely small, but many diabetics never reach the stage of so-called consumption. Diabetes mellitus has not the monopoly of the consumptive cachexia, and the various forms of diabetes—"azoturic," "hydruric," "phosphaturic"—all tend to produce general deterioration of the individual, or what Rolland calls "consumption" of tissue. In the "hydruric" diabetes the vision is never affected. In the "azoturic" form there has been noticed a diminution of visual acuity without visible ophthalmoscopic alteration, though Galezowski reports one case of this kind with retinal hæmorrhages. The proof that the visual disturbance precedes not the so-called consumption, but also the main symptoms of diabetes mellitus, is found in the considerable number of patients in whom the oculist first has reason to suspect the existence of a previously unrecognized diabetes.

A Case of Partial Trichiasis relieved by Stellwag's Method of reversing and replanting the Ciliary Border.—Hotz ("Amer. Jour. of Ophthal.," May, 1887) reports a case of this kind in a man, aged thirty-one, in whom the lower lid of the right eye had been operated upon a year before by means of transverse ligatures. The final result of this operation was that the lateral portions of the lid border were everted, but the central portion was not affected, and here the cilia still brushed over the cornea. Hotz did his operation on February 17th, under strictly antiseptic precautions. The lid border was split with a lance knife as far as the cilia were inverted; from each end of this incision a vertical cut, 4 or 5 mm. long, was made from the lid border downward, and the lower ends of these incisions were united by a transverse incision. Thus a rectangular flap, 6 mm. long by 4 or 5 mm. wide, was mapped out, with the upper edge containing all the inverted cilia. This flap was completely detached and packed between cloth, which was constantly sprinkled with a warm sublimate solution. After the bleeding had ceased and the wound was carefully cleansed of all coagulated blood, the flap was placed back upon it with the eyelashes turned downward, and the originally lower edge of the flap joined to the lid border. When the flap was nicely adjusted the lids were closed and irrigated with sublimate. A piece of aseptic tin-foil coated with vaseline was placed on the lids and a binocular bandage applied. This dressing was not disturbed for three days. The result was good, though the lashes subsequently dropped out, all but two.

Miscellany.

The Medical Society of the State of New York and the Treatment of the Insane.—The committee to whom was committed that portion of the president's opening address relating to the treatment of the insane would respectfully report:

1. That until comparatively recent times the insane were considered and treated as criminals and confined in dungeons or prisons.

2. Their subsequent retention in poor-houses was but a remnant and mitigation of the old system.

3. The treatment of the insane has improved with the progress of civilization.

4. Therefore special hospitals were supplied for them and their welfare was intrusted to scientific and humane experts.

5. To return to anything like the old system of treating the insane in poor-houses or relegating them to the custody of county officials would be a grave mistake.

As early as 1855, at a meeting of the county superintendents of the poor, held at Utica, the following among other resolutions was passed:

"*Resolved*, That no insane person should be treated, or in any way taken care of, in any county poor- or alms-house or other receptacle provided for and in which paupers are maintained and supported." (Fifty-fifth Annual Report, State Asylum at Utica.)

6. For the proper classification and treatment of the insane more means are required than for the patients of general or even other special hospitals. Institutions for the insane therefore demand medical experts as superintendents, nurses trained in the general care of the sick and then in the special care of the insane, schools for the physical and intellectual training of the insane, for the practice of out-door and in-door industries, and many other appliances.

7. The Medical Society of the State of New York expresses, therefore, its objections to any plan or law which in any way looks to the return of the insane to the county poor-houses as being unscientific and inhumane, and expresses its conviction that those institutions, like the State asylums, which have boards of managers accountable to the State government and also to the public, are best adapted for the care of the insane poor of the State.

All of which is respectfully submitted.

[Signed.] A. Jacobi,
C. R. Agnew.

Adopted, February 9, 1888.—*Resolved*, That the foregoing report on the treatment of the insane be sent to the Committee on Legislation of the Medical Society of the State of New York, with instructions to use it in its discretion, in the legislature and elsewhere, to further the objects in view.

In the discussion which followed, the subjoined was read as illustrating the progress which is being made in the scientific nursing of the insane, a kind of progress not likely to reach the insane if shut up in poor-houses:

Extract from a Letter of Dr. Joseph M. Cleveland, Medical Superintendent, Hudson River State Hospital, Poughkeepsie, to Amasa J. Parker, Jr., President of the Board of Managers of said Hospital, dated February 5, 1888:

"Next month (March) we graduate four young women from our Nurses' Training-School. All four before coming here had graduated from a general hospital training-school. They will have been with us one year in March. They have been very thoroughly instructed in mental nursing by lectures, class instructions, quizzes, and clinical teaching. They are bright, intelligent, and full of ambition to become thoroughly equipped in all that pertains to a high order of nursing."

American Medical Association.—The permanent secretary, Dr. William B. Atkinson, has issued the following notice:

Philadelphia, 1400 Pine Street, S. W. cor. Broad.

The thirty-ninth annual session will be held in Cincinnati, Ohio, on Tuesday, Wednesday, Thursday, and Friday, May 8, 9, 10, and 11, commencing on Tuesday, at 11 A. M.

"The delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies *as are recognized by representation in their respective State societies*, and from the Medical Department of the Army and Navy, and [illegible]e Marine-Hospital Service of the United States.

"Each State, county, and district medical society entitled to repre[illegible]tation shall have the privilege of sending to the association one [illegible]egate for every ten of its regular resident members, and one for every additional fraction of more than half that number: *Provided*, however, that the number of delegates for any particular State, territory, county, city, or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the code of ethics of the association."

Secretaries of medical societies, as above designated, are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the permanent secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the secretaries *are, by special resolution*, requested to send to him annually a corrected list of the membership of their respective societies.

Sections.—"The chairman of each section shall prepare an address on the recent advancements in the branches belonging to his section, including such suggestions in regard to improvements in methods of work, and present, on the first day of its annual meeting, the same to the section over which he presides. The reading of such address not to occupy more than forty minutes. . . ."—*By-laws.*

Practice of Medicine, Materia Medica, and Physiology.—Dr. ———, chairman; Dr. N. S. Davis, Jr., 65 Randolph Street, Chicago, Ill., secretary.

Obstetrics and Diseases of Women and Children.—Dr. Eli Van De Warker, 45 Montgomery Street, Syracuse, N. Y., chairman; Dr. E. W. Cushing, 1 Hotel Pelham, Boston, Mass., secretary.

Surgery and Anatomy.—Dr. Donald McLean, 72 Lafayette Avenue, Detroit, Mich., chairman; Dr. B. A. Watson, 124 York Street, Jersey City, N. J., secretary.

State Medicine.—Dr. H. B. Baker, Lansing, Mich., chairman; Dr. S. T. Armstrong, United States Marine-Hospital Service, secretary.

Ophthalmology, Otology, and Laryngology.—Dr. F. C. Hotz, 181 Clark Street, Chicago, Ill., chairman; Dr. E. Jackson, 215 South Seventeenth Street, Philadelphia, Pa., secretary.

Diseases of Children.—Dr. F. E. Waxham, 3449 Indiana Avenue, Chicago, Ill., chairman; Dr. W. B. Lawrence, Batesville, Ark., secretary.

Oral and Dental Surgery.—Dr. J. Taft, Cincinnati, Ohio, chairman; Dr. E. S. Talbot, 125 State Street, Chicago, Ill., secretary.

Medical Jurisprudence.—Dr. E. M. Reid, 243 North Fremont Street, Baltimore, Md., chairman; Dr. C. B. Bell, Suffolk, Mass., secretary.

Dermatology and Syphilography.—Dr. L. D. Bulkley, 4 East Thirty-seventh Street, New York, chairman; Dr. S. F. Dunlap, Danville, Ky., secretary.

A member desiring to read a paper before a section should forward the paper, or its *title* and *length* (not to exceed twenty minutes in reading), to the chairman of the Committee of Arrangements at least one month before the meeting.—*By-laws.*

Committee of Arrangements.—W. W. Dawson, Cincinnati, Ohio, chairman.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending February 17th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending January 28th corresponded to an annual rate of 22·5 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 14·3, and the highest in Manchester, viz., 31·9 in a thousand. Small-pox caused 37 deaths in Sheffield, 1 in Bristol, and 1 in Leeds.

During the year 1887, 530,577 deaths were registered, corresponding to an annual death-rate of 18·8 in a thousand of the estimated population. The deaths from all causes included small-pox, 505; diphtheria, 4,339; fever (typhus, enteric, simple, and ill-defined), 5,653; scarlet fever, 7,719; whooping-cough, 10,661; measles, 16,297; diarrhœa, 19,502.

London.—One thousand eight hundred and sixteen deaths were registered during the week ending January 28th, including 16 from measles; scarlet fever, 29; diphtheria, 29; whooping-cough, 168; enteric fever, 13; and diarrhœa and dysentery, 11. Diseases of the respiratory organs caused 534 deaths; different forms of violence, 59; and 3 suicides were registered. The deaths from all causes corresponded to an annual rate of 22·1 in a thousand. In greater London 2,298 deaths were registered, corresponding to an annual rate of 21·7 in a thousand of the population. In the "outer ring" 15 deaths from diphtheria and 74 from whooping-cough were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending January 28th in the sixteen principal town districts of Ireland was 30·9 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 4·8, and the highest in Cork, viz., 47·4 in a thousand. In Dublin 224 deaths were registered, including 2 from measles; whooping-cough, 8; diphtheria, 6; scarlet fever, 10; typhus, 1; enteric fever, 2; diarrhœa, 3; and erysipelas, 1.

Scotland.—The deaths registered in eight principal towns during the week ending January 28th corresponded to an annual rate of 22·4 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12·8, and the highest in Perth, viz., 25·6 in a thousand. The aggregate number of deaths registered from all causes was 567, including 10 from measles; diphtheria, 9; scarlet fever, 7; whooping-cough, 22; fever, 8; and diarrhœa, 13.

Callao.—The following is a copy of a dispatch received from the United States consul, under date of January 14, 1888:

The last cable message from Dr. Matto, the medical representative of Peru now in Chili, is to the effect that cholera is decreasing both at Santiago and Valparaiso, and its course is still proceeding to the southward. From the 15th of December to the 1st instant there were 1,288 cases of cholera in the Valparaiso hospitals, of which 644, or exactly 50 per cent., terminated fatally. Dr. Puga-Bonne, the Chilian delegate to the Sanitary Congress at Lima, has arrived, and the deliberations of that body, under the presidency of Dr. Rosas, one of the Peruvian representatives, are being continued. As yet regulations to govern the proceedings have alone been considered. The health of this port and of Lima is satisfactory.

Cayenne.—The United States consul, in his dispatch dated January 16, 1888, states that "yellow fever was declared here on the 9th January, instant, by the board of health, and that foul bills of health are now issued."

Santiago de Cuba.—The sanitary inspector reports for the week ending February 4, 1888, that "the sanitary condition of the town has been excellent. No contagious diseases have been reported. Small-pox has completely disappeared from the country, where it was causing some ravages. Yellow fever still exists at the military hospital among the newly arrived recruits, 3 cases and 5 deaths having been reported.

Havana.—Two deaths from yellow fever and 57 from small-pox are reported for the week ending February 4, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	January 28.	2,260,945	1,153	..	....	12	....	23	6	47
Glasgow	January 28.	545,678	234	..	....	....	....	5	1	4
Warsaw	January 21.	439,174	188	..	....	6	....	....	2	....
Calcutta	December 17.	433,219	229	20	....	....	....	....	....	....
Calcutta	December 24.	433,219	257	16	....	....	....	....	....	....
Calcutta	December 31.	433,219	244	17	....	....	....	....	....	....
Amsterdam	January 28.	389,916	183	..	..	....	....	2	....	2
Copenhagen	January 24.	300,000	146	..	....	....	....	....	1	10
Munich	January 24.	275,000	142	..	...	.. .	....	2	....	5
Edinburgh	January 28.	258,629	113	..	....	....	....	1	....	2
Palermo	January 29.	250,000	164	..	....	....	....	....	2	4
Belfast	January 28.	224,422	129	..	....	....	....	2	1	2
Geneva	January 28.	179,390	141	..	....	9	....	....	....	1
Leipsic	January 28.	170,000	73	..	....	....	....	1	2	4
Trieste	January 21.	154,500	112	..	....	9	....	1	2	5
Toronto	February 11.	130,000	37	..	....	....	....	....	....	4
Havre	January 28.	112,074	69	..	....	3	...	....	....	1
Barmen	January 28.	109,000	48	..	....	....	1	....	....	2
Reims	January 21.	97,903	53	..	....	1	....	....	....	7
Mayence	January 21.	65,701	42	..	....	....	....	....	1	1
Gibraltar	January 22.	23,631	11	..	....	....	....	....	1	1

UNITED STATES.

Port Townsend.—The medical officer in charge of the Marine-Hospital Service reports, under date of the 5th instant, that the schooner Courser, from San Francisco with a case of small-pox on board, has been placed in quarantine by the local board of health.

ANSWERS TO CORRESPONDENTS.

No. 149.—By "first phalanx" we understand a proximal phalanx—one that articulates with a metacarpal or metatarsal bone.

No. 150.—As given in the United States Pharmacopœia of 1880, the formula for the compound licorice powder (pulvis glycyrrhizæ compositus) is as follows:

Senna, in No. 60 powder	18	parts;
Glycyrrhiza, in No. 60 powder	16	"
Fennel, in No. 60 powder	8	"
Washed sulphur	8	"
Sugar, in fine powder	50	"

The ingredients are directed to be rubbed together until they are thoroughly mixed.

No. 151.—Connect the first zinc with one of the binding-posts, the first carbon with the second zinc, the second carbon with the third zinc, and so on, and the last carbon with the other binding-post.

To Contributors and Correspondents.—*The attention of all who purp favoring us with communications is respectfully called to the foll ing:*

Authors of articles intended for publication under the head of "ori contributions" are respectfully informed that, in accepting such cles, we always do so with the understanding that the following tions are to be observed: (1) when a manuscript is sent to this nal, a similar manuscript or any abstract thereof must not have been sent to any other periodical, unless we are specially of the fact at the time the article is sent to us; (2) accepted a are subject to the customary rules of editorial revision, and published as promptly as our other engagements will admit o can not engage to publish an article in any specified issue; (conditions which an author wishes complied with must be dis stated in a communication accompanying the manuscript, new conditions can be considered after the manuscript has be into the type-setters' hands. We are often constrained to articles which, although they may be creditable to their autho not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ACUTE BRIGHT'S DISEASE IN CHILDREN.*

By A. JACOBI, M. D.,

LATE PRESIDENT OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK; PRESIDENT OF THE NEW YORK ACADEMY OF MEDICINE, ETC.

Most cases of acute nephritis exhibit no striking symptoms. Thus it is that so many are overlooked. The temperature is often but little elevated, but appears to be less so than it actually is. Many practitioners are in the habit of using the thermometer only when there is a perceptible warmth to the touch. This is a mistake, for the incipient anasarca renders the skin cooler than it would be under ordinary circumstances. The condition of the subcutaneous tissue renders the axillary temperature also lower; thus reliance can be placed only on the temperature when it is taken often and in the cavities, mainly the rectum.

It is dropsy which as a rule is the first symptom that draws attention to the kidneys. The eyelids are swollen, the face is bloated. When the child is kept in bed the first pitting is noticed in the lumbar and gluteal regions. Then complete anasarca will follow; ascites (dullness in proper places, fluctuation), hydrothorax (dullness, suppressed respiration, change of level of fluid by changed position, dyspnœa, absence of pleuritis, etc.), hydropericardium (excessive dyspnœa, heart-beat quick, feeble, irregular, distant, triangular dullness over a large surface), pulmonary œdema (moist rhonchi over the lower lobes, mostly bilateral, but little dullness, ascending, dyspnœa increasing, expectoration of froth in large quantities, etc.), and œdema glottidis (symptoms of croup, with œdema tangible about the aryepiglottic folds, etc.), meningeal and cerebral œdema, one of the forms of uræmia.

The other two forms of what is comprised under the head of uræmia are, secondly, the direct poisoning by the retention of urea in the blood, and, thirdly, reflex irritation, from the same cause, of the vaso-motor centers with spastic contraction of arteries and increase of blood-pressure. The latter is at the same time a cause of cerebral disorder and of cardiac hypertrophy.

The nervous disorders of uræmia may show themselves in different ways. Uræmic diarrhœa belongs here as well as nausea and vomiting. There are, besides, dizziness, dim vision, amblyopia, deafness, headaches, sopor, delirium, convulsions. Some of these symptoms are very sudden and surprising.

It is but a month ago that I saw a case of undoubted Bright's disease without brain symptoms of any kind with Dr. F. Huber.

The boy was quite intelligent, six years old, and answered slowly but correctly. He had become suddenly and totally blind. The absence of any other brain symptoms induced us to suspect local extravasation. As no other hæmorrhages have made their appearance anywhere, and the boy got better of his blindness while his kidneys improved, I believe we were mistaken, and his blindness was uræmic.

The urine is scanty in the beginning, rarely of low, usually of high specific gravity, 1·020 to 1·030 and more, bloody, smoke-colored, or suppressed.* It contains albumin, but little, "only a trace," in the beginning, gradually more. There are cases of nephritis without any albumin, though it may not be a case of shrinking kidneys. Such a case I saw with the late Dr. Charles A. Budd twenty years ago. The urine was scanty but light, and contained no albumin, and but a trace of urea; thus it was more a transudation than a secretion.

Transient albuminuria, on which Dr. F. P. Kinnicut published an able essay in the "Archives of Medicine," February, 1882, has, according to him, the following causes:

1. "Temporary presence of imperfectly oxidized matter in the circulation." This takes place in dyspepsia from any cause, and in fever, which, besides, gives rise to the destruction of blood-cells and to a diminution of blood-pressure and of the velocity of circulation.

2. "Vaso-motor disturbance in the kidneys, either general or local." That occurs in changes of innervation, lesions of various parts of the brain resulting in arterial spasm, in cerebral meningitis, in delirium tremens, in poisoning with morphine, strychnine, or ether, and in an epileptic seizure.

Albuminuria, however, though it is often the first symptom of acute Bright's disease, is not Bright's disease. It may appear and reappear without any permanent tissue changes in the kidneys.

3. "Transient dilatation of blood-vessels and retardation of blood-current in the glomerular vessels, with a consequent possible alteration in the functions of the glomerular epithelium."

I should add—

4. Congenital (or acquired) feebleness of the structure of the blood-vessel walls.

5. Permanent retardation of circulation from congenital smallness of blood-vessels, such as is the frequent cause of obstinate or life-long chlorosis, and, as I believe I can prove, sometimes of pernicious anæmia. In these cases the albuminuria is apt to return frequently.

In the acute nephritis of childhood the kidney is enlarged through an increase mostly of the cortical substance. This increase depends mainly on fibrinous exudations in the convoluted uriniferous tubules, and effusion into the interstitial tissue. At the same time there are proliferation of the epithelium of the tubes and Bowman's capsules and an accumulation of round cells and red blood-corpuscles in the tubes, and, in bad cases, also in the interstitial tissue. These are the changes which, more or less developed, take place in every form of acute nephritis, no matter whether the individual cases, according to their various causes and accompanying clinical symptoms, are defined as catarrhal, hæmorrhagic, interstitial, or septic inflammations. There are many authors, however, who maintain that, in accordance with the fact that the floating poison strikes the glomeruli first, the primary affection takes place in them, and descends from them into the tubules. On section, the surfaces are of a dark-red color, interrupted only by grayish spots corresponding with the accumulations of fibrin in the glomeruli; a bloody serum oozes out. There are punctated extravasations, the tissue is fragile, the pyramids and vessels are injected, and also of a deep-red color.

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* Read, as part of a general discussion on acute Bright's disease, before the Medical Society of the State of New York, February 7, 1888.

* The sediment of the urine contains salts, epithelia, and casts. The casts are hyaline at first, covered with adhering cells and blood-corpuscles. Both casts and cells will afterward become granular.

The body exhibits also dropsical effusions, almost always in the subcutaneous tissue, sometimes in the peritoneal, pericardial, and pleural cavities. The pleural effusion is sometimes complicated with fibrinous pleuritis.

Thus it is observed that no circumscribed definition of any of the forms of acute nephritis can be furnished. The inflammatory process is not limited to a particular tissue or locality. Even medicinal poisoning exhibits all sorts of changes and grades at the same time. The process affects the epithelia of every part, from the capsule to the glomeruli; also the stroma, which is infiltrated with lymph-cells, and may develop to the final stage of shrinking. Thus it becomes evident that the various attempts at eliminating the term "Bright's disease" from our nomenclature have thus far remained abortive.

There is one cause of acute nephritis—resulting from an originally chronic disorder—very common in the last decades of life, which is not observed in the infant and child, viz.: *atheromatous degeneration* of the smallest arteries of the kidney. All the other sources of nephritis are more or less common to all ages, with this exception, that the majority of cases under observation are the results of poisons of an infectious character. The frequency of *eruptive and infectious diseases* in infancy and childhood—mainly *scarlatina, diphtheria,* also to a certain extent *measles, rubella, and varicella*—explains the liability to renal disorder satisfactorily. The influences of the floating poisons are graduated by their nature, intensity, and amount, by the rapidity or slowness of their admission into the circulation, by the velocity of elimination, and, finally, by the independence and vigor in the cell life of the patient. Thus, in order to furnish a single instance, it is explained why it happens that nephritis is so much rarer and milder in the infant typhoid fever, with its slow development and moderate heat, than in scarlatina, with its shorter incubation, dangerous onset, high fever, and inflamed surface.

There are several influences which produce acute nephritis in adults but are uncommon in the young. *Syphilis* gives rise to chronic nephritis rather than the acute form, even in adults. *Malaria* is known to result sometimes in intermittent albuminuria, with blood and kidney elements in the urine, but I have not met with a case in practice among children. *Alcoholism* is, as a rule, a privilege of advanced age. *Acute articular rheumatism* predisposes to acute nephritis less in children than in adults, because most attacks, though they are frequent in infants and children, are with them of a milder type. Even rheumatic endocarditis, though of frequent occurrence, is less imminently dangerous in children, either by itself or through a consecutive acute nephritis.

Still, I have under observation at present a baby a year old that has suffered from articular rheumatism, thus far without endocarditis, these four or five weeks. A slight œdema of the left eyelid led to the examination of the kidneys. I must add, however, that the baby was affected with *intestinal catarrh* for several months last summer, and it is possible that the kidneys have been affected since.

Of *chronic rheumatism* as a cause of nephritis I know of no instance. I have seen acute nephritis after an attack of *quinsy sore throat*, with and without rheumatic complication, but have not been able to convince myself that the former must necessarily be the consequence of the latter. But I have noticed several cases of nephritis growing out of *purpura rheumatica*, and one this very week, in a boy of four years, who developed nephritis with purpura (hæmaturia, cutaneous hæmorrhages, and epistaxis).

In *acute pneumonia*, albuminuria is frequent; nephritis not so much so in children as in adults, in whom the latter is frequently the cause of death. Even in them many of the cases existed unknown when the pneumonia started, and was diagnosticated during the course of the disease or at the autopsy. It is possible to explain the occurrence of nephritis during pneumonia in two ways—either by the disturbed circulation and high temperature, or perhaps by the simultaneous effect of the cause of infectious pneumonia—pneumococcus, or ptomaine, or what not—on the lungs and kidneys. Still, not only croupous pneumonia, but also *broncho-pneumonia* and *bronchial catarrh* are either coordinate and simultaneous with nephritis or sometimes precede it.

Heart diseases other than rheumatic will also give rise to nephritis by retardation of the circulation, and occasionally by embolism.

A number of *medicinal substances* are known, when applied to the surface, to produce nephritis—such as tar, turpentine, petroleum, styrax, iodine, cantharides, balsam of Peru, naphthol, and carbolic acid. The internal administration of carbolic and salicylic acids, pyrogallic acid, cantharides, mineral acids, oxalic acid perhaps, also lead, arsenic, phosphorus, and mercury has been known to have the same effect; also the subcutaneous application of manganese and iron. One of the most dangerous articles in this respect is *potassium chlorate.* My first warning in 1860 was not noticed much. Nine years ago I read a paper before this society on the same subject. Since that time the attention of the medical profession all over the world has been wide awake, and cases of poisoning have been reported. I supposed at that time that the acute nephritis following the administration of the drug was its direct result, and but a year ago Professor Stockvis, of Amsterdam, tried, in an elaborate series of experiments, to sustain my opinion. But it is probable that the nephritis is only the final outcome of the methæmoglobinuria resulting from the influence of the poison on the blood, in the manner which was illustrated a few years ago by Dr. George B. Fowler before this society.

A sudden *exposure to a cold temperature* is certainly a cause, and not an uncommon one, of acute nephritis in children. A fall into water, or through the ice, or exposure to a rain-storm, and a drive in an open sleigh, I have seen repeatedly followed by an attack of acute nephritis. This is a dangerous form, and many of those thus attacked die in from three to five days, with more or less complete suppression of urine; total suppression I have seen once to last even more than five days. This suppression of urine is often relieved a short time before death, thus arousing false hopes. In the same way I have seen hæmaturia and hæmoglobinuria returning after every exposure for years. What, now, is the cause of the acute inflammation? Is it the sudden contraction of the cutaneous vessels alone, and the consecutive congestion of internal organs? Is it the suppression of the elimination of effete material, which acts as an irritant upon the viscera? This much is sure, that, by covering the body of a shaved animal with varnish and thus reducing the temperature, the internal organs become the victims of a high degree of congestion. Lassar experimented on animals that had been affected with nephritis. When, after recovery or during convalescence, he plunged the animal into ice-cold water, a renewed attack of the nephritis was the result. Besides, there was congestion of the liver, lungs, heart, and neuroglia.

Nephritis is also produced by *combustion* of a larger or smaller part of the surface. Of this form I have seen many cases. Sometimes there is hæmoglobinuria only, through the destruction of blood-cells. This alone may give rise to nephritis. In these cases blood-cells and casts are found in the urine, sometimes hæmoglobin only. Post mortem, there are hæmorrhages in the capsule and tubules, and a granular mass in the tubules, without a radical change in the glomeruli or endothelia.

In the very young infant nephritis is by no means uncommon. It is met with in many cases of *tetanus* of the newly born and in *sepsis*. One of the main organs affected in acute fatty degeneration of the newly born, as first described by Buhl, which consists in a parenchymatous inflammation of most of the organs, is the kidney. The latter shows hæmorrhages in the tissue, swelling of the cortical substance, a dark color in recent, a yellow hue in older, cases, and fatty degeneration of the convoluted uriniferous tubules, which are sometimes completely obstructed.

In the *epidemic hæmoglobinuria* with icterus and cyanosis, described by Winckel in 1879, the condition of the kidneys was such that nephritis would have been observed but for the short duration of the disease (from nine to thirty-two hours). The cortical substance was larger and brownish, and contained a great number of punctated hæmorrhages; the pyramids either were of a uniform dark-red hue or showed fine blackish stripes, which converged in the direction of the papillæ. The discoloration was found to depend upon the presence of granular hæmoglobin in the straight uriniferous tubes; no normal red blood-cells were met with.

Nephritis complicates and is complicated with *erysipelas, pyæmia, pleurisy, pneumonia*, and *meningitis*. Parenchymatous nephritis is sometimes connected with *myocarditis*, and its occurrence must be suspected, when the slightest symptoms point to it, in thoroughly *rhachitical* infants, in whom that affection makes its appearance in the very first months of life. Soon after birth, merely in consequence of the abrupt changes taking place in the general circulation, an almost physiological albuminuria is observed. This must not be mistaken, however, for a form of nephritis which is apt to be quite serious—viz.: that which is the result of a *traumatic lesion* of the pyramids, and sometimes even the pelvis. Such a lesion is the occasional result of the presence and elimination of the *uric-acid infarcts* which, to a greater or less extent, are noticeable in the kidneys of every baby between the second day and the end of the third or the beginning of the fourth week. I have seen such cases, and also those which were initiated with a slight hæmorrhage from the kidney. In later months *chronic exanthems* of every kind, extensive eczema in particular, are the causes or complications of nephritis. It is also a frequent accompaniment of acute intestinal catarrh, "cholera infantum." Marshall Hall's hydrencephaloid is, in its worst forms, either intracranial thrombosis in the smallest veins or nephritis. In many cases of *chronic diarrhœa*, also, the autopsy reveals parenchymatous nephritis.

At that early age dropsy is not uncommon. But more frequent are several cerebral symptoms of such a degree that the differential diagnosis from typhoid fever and meningitis has often been missed. The fontanelles are depressed; convulsions and other symptoms of uræma e quite common.

Without the examination of the urine the diagnosis can not be made. The covering of the penis with a condom may secure a specimen, but no time must be lost in obtaining it. The introduction of a silver probe into the urethra may suffice to produce micturition when the bladder contains urine in fair quantity, which then can easily be caught in a cup. If none will come, or if there is too little in the bladder, the catheter has to be used. I use an elastic one in most cases, Nos. 3 to 6 French, usually Nélaton, but rarely a metal instrument. Its introduction is almost always quite easy. A duplicature of the mucous membrane, such as Englisch has met with, or a congenital hypertrophy of the prostate, or an irregular course of the canal, is very rare indeed. A spasm of the urethra or uncommon restlessness on the part of the patient may require a few inhalations of chloroform, but, as a rule, there is no period of life in which the use of a catheter is less beset with difficulties than early infancy. Only be sure that the instrument is aseptic. Not three weeks ago did I see a vigorous man die of sepsis ten days after a single introduction of a bougie of doubtful cleanliness.

In *typhoid* and in many other infectious fevers with high grades of temperature there is a pretty universal parenchymatous degeneration. The blood is dark, coagulates less readily, and becomes thick and viscid. The muscles undergo a fatty or waxy degeneration, and rupture with great facility, most of all the rectus abdominis; the heart becomes soft, gray, or brown, fatty, pigmentous, and waxy. The walls of the blood-vessels contain fat and pigment, and the nuclei of the capillaries become subdivided and disintegrated. Thus hæmorrhages and secondary inflammatory processes are quite frequent, mostly in the brain and in the kidneys, without any such preparatory disposition as is created by syphilis or tuberculosis.

In the typhoid fever of the young, nephritis is not so common as in adults, because the average cases are less severe. When it does occur it is apt to be mild, and both albumin and kidney elements are apt to disappear within a week or two. Albuminuria alone, it is true, is more frequent in the first week, while the high temperature may last in abruptly developed cases, and will give rise to no inconvenience. Rosenstein professes to have observed it mainly in the cases treated with *salicylate of sodium*. Still there are very serious cases, mainly hæmorrhagic, with protracted and high fever, which render the differential diagnosis quite difficult. It is true that a very high temperature is not often seen in acute nephritis, but sometimes it is. On the other hand, typhoid fever of the young (and with us of the old also) runs its full course often without a high temperature. Thus the latter alone does not facilitate the differential diagnosis between the two. Nor, in cases which terminate fatally, are the results of the post-mortem examination very conclusive, for the anatomical changes in the kidneys are not always very marked, though the urine contained during life plenty of blood and renal elements, and the complications were quite serious. These are pneumonia, inflammation of the serous membranes, mainly the pleura and pericardium, and uræmia. Some of the cases are glomerulo-nephritis, as mostly in scarlatina. The results are sometimes fatal, but mostly favorable as to complete recovery, for I do not remember more than a single case in which this typhoid acute nephritis terminated in the chronic variety.

In *scarlatina*, albuminuria may appear in the very first days, during the high temperatures of the first stage. It may be complicated with the presence of hyaline and blood cylinders. These may remain though albumin disappears from the urine. Nephritis, as a rule, begins about the ninth or tenth day or later, and rarely after the twenty-third I have seen it making its appearance on the thirty-eighth day, in a girl of five years who had scarlatina twice in the period of a year and a half. In her first attack nephritis commenced, after desquamation was nearly completed, on the thirty-fifth day; in the second, on the thirty-eighth. She had been well of the first more than a year, being under close observation all the time, when the second appeared. She has been well these seven years.

Most cases get well in some weeks. Some take several months, or even a year. Not a few cases become chronic and may terminate after a long time. The longest duration in my recollection of this secondary chronic state, which finally terminated fatally with uræmic convulsions, was eleven years. During this chronic condition there may be many exacerbations in the shape of a true acute nephritis, with blood and blood casts, epithelial casts, granular casts, and granular cells in the urine.

The usual form of scarlatinous nephritis begins in the glomeruli, which are changed in both their epithelia and walls, and filled with coagulated fibrin. They show a grayish discoloration, and are thick and impermeable to such an extent as to give rise to obstruction and uræmia at a very early stage. This early uræmia may soon terminate fatally, while that occurring in a later stage is apt to run a more favorable course. Still, the glomerulous form is by no means the only nephritis of scarlatina. Not infrequently is the interstitial tissue infiltrated with round cells, while the epithelia are but little altered. In these cases the kidney is flaccid, large, and hæmorrhagic. Also the blood-vessels are changed; round cells conglomerate around them, and their adventitia undergoes hyaline degeneration.

Much has been said of the frequent occurrence of nephritis in *diphtheria*. It is true that albuminuria is frequent, and it is explained by the presence of irritating material floating in the circulation, perhaps also by the elevated temperature, and certainly by the impediment to the circulation resulting from the rapidly increasing debility of the heart. This albuminuria occurs at an earlier period of the disease than it does in scarlatina—frequently on the second or third day. To look, however, upon its presence at that early time as a pathognomonic symptom is incorrect. In it the admixture of blood is not so frequent as in scarlatina.

Albumin may make its appearance, though generally in the first week, in the later periods of diphtheria also. What, however, we call diphtheria is often the name for a series of attacks. It may appear with or without fever, with increasing severity or rapid improvement. Indeed, I have reported cases of albuminuria in diphtheria—in my treatise and otherwise—in which a copious elimination of albumin was immediately followed by a rapid improvement in all the symptoms. Albuminuria may reappear, and this is the result of either a relapse or a new attack of the disease, or depends on the transmutation and elimination of diphtheritic infiltrations previously deposited, mostly in glands. When it appears, however, on the very first day of the disease, it illustrates beautifully to what extent the homogeneous substances of the body may be affected at the same time, for in these cases it is the epithelium of the throat and that of the kidneys which undergo morbid changes at the same instant.

Meanwhile the kidneys may be perfectly normal; sometimes, however, slight hæmorrhages take place under the capsule, and also in the tissue of the organs. Still, every form of nephritis has been observed, with rapid obstruction of the tubules by swelling endothelium, rapid yellow fatty degeneration, and speedy fatal termination. Now and then the process begins either in the cells or in the uriniferous tubules, or in both contemporaneously. In most cases it displays its power in the round cells, their vitality or destructibility deciding the fate of both kidney and life. Characteristic bacteria have not been found by the best observers; even those who have noticed them at all admit that they have often failed. In his very latest publication —"The Pathogenesis of Epidemic Diphtheria in its Histological Aspects," 1887—Oertel, who has alleged diphtheria to be the result of micro-organisms these twenty years, admits that he can not find any in the nephritis of diphtheria. Most observers express themselves very reservedly on this point, and the best answer it negatively.

The anatomical appearances and the symptoms do not vary from those of scarlatinous nephritis. Only the very worst forms of diphtheritic nephritis are apt to destroy life in a few days, while the majority terminate favorably, even more so than nephritis in scarlet fever. Thus it is that dropsy of the subcutaneous tissue and the cavities is but rare. At all events, the attempts of Schotten ("The

General Diphtheritic Infection," 1885) to prove an essential difference between the nephritis of the two diseases are very strained indeed when he tries to explain the more favorable course of nephritis in diphtheria by the assertion that "surely but one kidney is affected," because (?) in diphtheria it is "uncommon that bilateral organs are stricken simultaneously," and that "most commonly the nose, tonsils, and ocular and flexor muscles are affected on one side only." All of this is not in accordance with the nature of the disease and its localizations.

(*To be continued.*)

HYPERPHORIA.

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I wish to state in the beginning of this paper that the matter herein contained has been written in no polemic spirit. It seems that Dr. George T. Stevens was the first to describe the condition known as "hyperphoria," and to him much credit is due for the work he has done and the renewed interest which he has awakened in the study of the ocular muscles.

"Hyperphoria is that condition in which, with the ability to maintain binocular vision, there is a tending of one visual line above its fellow." "This term does not imply that the line to which it is referred is too high, but that it is higher than the other, without indicating which may be at fault."

Hyperphoria is determined in the following manner: "First of all, a prism of sufficiently high grade to produce diplopia is placed with its base toward the nose before one of the eyes. The two images of the object then seen are homonymous—that is, the right image is seen with the right eye, the left with the left eye. If the two images are seen in exactly the same horizontal plane, no deviating tendency in this direction is manifest. If one of the images rises higher than the other, there is absence of equilibrium in this respect, and the condition is the one called hyperphoria. If in the test the left image of the object is seen higher than the other, it indicates that the visual line of that eye tends below that of its fellow, and that the visual line of the right eye has, in fact, a tendency to rise above the left visual line. This is *right hyperphoria*, and the state in which the right image is seen above the plane of the other is known as *left hyperphoria*.

"If, as in the first instance, the left image is higher than the other, we determine the degree of right hyperphoria by finding the grade of prism which, placed with its base down before the right eye, or with its base up before the left, will bring the two images exactly to the same horizontal plane, and the result is recorded accordingly. Thus, if a prism of 2° base down before the right eye corrects the deviation from the horizontal plane, we write right hyperphoria, 2°."

Under "Treatment of Hyperphoria" Dr. Stevens says: "The best treatment for hyperphoria is tenotomy of the muscle which forces the eye out of its proper direction.

"It is not always easy or even possible to determine to which muscle we are to attribute the vicious tendency.

"The superior rectus of one eye may be short, causing too great tension upward, or the inferior rectus of the opposite eye may be at fault, tending to draw the eye downward. . . .

"With all these elements of uncertainty the highest skill of the surgeon may be demanded in forming a correct conclusion. . . .

"In the majority of cases, however, in which the hyperphoria does not exceed three degrees, it is proper to relax either the superior rectus of the eye of which the deviating tendency is upward, or the inferior rectus of the other. In general, it will be found best to select the superior rectus. If more than three or four degrees of deviating tendency is found, it is better to correct a part upon the superior rectus of one eye, and what remains of the defect upon the inferior rectus of the other eye some days later."

In reading the definition of hyperphoria, let it be borne in mind that a *tending* of one visual line above its fellow is mentioned. The fact that binocular vision is attained and retained excludes the possibility of one visual line *lying* above its fellow. The condition of difference in plane between the two visual lines must then be only an artificial one, which is manifested by the causation, artificially, of homonymous diplopia.

It is stated that the adjective hyperphoric applied to one visual line does not indicate that it is at fault, but that it simply tends above its fellow. Now, the normal lines should lie in the same plane, and the proper plane of each eye is that plane which is coursed by a straight line from the macula lutea to the object looked at.

The "Graefe test" has been employed by all, since the time of its distinguished originator, to detect insufficiencies in the lateral straight muscles. It is thoroughly reasonable to suppose, when horizontal diplopia is caused artificially, that any insufficiency in the vertical straight muscles will become evident.

Strabismus sursumvergens and strabismus deorsumvergens have been recognized and treated long since; these conditions are only exaggerations of insufficiency in one of the vertical straight muscles. Why, then, may not a latent insufficiency or overtension in one of these muscles exist, as is known to be the case in the lateral straight muscles? And if it exists, why may it also not cause symptoms of asthenopia?

If it causes symptoms of asthenopia, the correction of the condition ought to relieve these symptoms.

In the preceding citations we have seen that, horizontal diplopia having been caused, if the two images are seen in exactly the same horizontal plane, no hyperphoria exists; if, however, one image rises higher than the other, there is "absence of equilibrium" of the vertical muscles—hyperphoria. When the left image is higher than the right, there is right hyperphoria. When the right image is higher than left, there is left hyperphoria.

To cite a case, if the left image stands higher than the right, one of two conditions is possible: either the left visual line tends lower than it should while the right is normal, or the right visual line tends higher than it should while the left is normal.

It has been stated that a "prism with its base down before one eye is equivalent in its action to a prism with its base up before the other." Inferentially, then, any prism that represents the power of the superior rectus of the right eye represents the power of the inferior rectus of the left eye; hence also the value of the superior rectus of the left eye, reckoned in prisms, is the value of the inferior rectus of the right eye.

From the standpoint of antagonism, one would infer that the opponent of the superior rectus of one eye was the inferior rectus of the other eye, and *vice versa.*

It seems to me that the antagonist of the superior rectus of one eye is the inferior rectus of the same eye. When the eyes are directed to distance and at an object in the same plane with themselves, the tension with which the superior rectus of each eye pulls should just equal that with which the inferior rectus of the same eye pulls. Equal tension would then be established, so far as the vertical straight muscles are concerned. It is stated also that "we can not make accurate determinations of both right and left sursumduction, if the test for one follows without interval after the other." It seems to me possible to make the determination of right and left *sursumduction* and *deorsumduction;* this is the point at issue, and this has furnished the *casus scribendi.*

As prisms of various strengths have been accepted as the expression of power for the ocular muscles, we will use them in the following. In the cases cited below, whenever there was hyperopia with good distant vision the error was corrected. Myopia was corrected in all cases. The distance of the patient from the object was fifteen feet.

The method of procedure is as follows: The patient being seated erect in an armless chair, with the head held as nearly as possible in the horizontal plane, homonymous diplopia is caused by placing a strong prism, with its base inward, over either the left or right eye. When the two images are seen in the same horizontal plane, equal tension of the vertical muscles is supposed to exist; the power of the separate vertical muscles of each eye is then determined, commencing with the *right eye.* Beginning with prism No. 1, the base is placed over the insertion of the inferior rectus; if one image still is seen, prism No. 2 is placed in the same position. The strongest prism that is overcome with its base in this direction indicates the power of the superior rectus—*sursumduction.*

The strongest prism that can be overcome with the base placed upward indicates the power of the inferior rectus—*deorsumduction.* The same procedure is employed immediately over the left eye.

1. Homonymous diplopia having been caused, the images were found to stand in the same horizontal plane. Testing the power of each vertical muscle separately, I found:

Right Eye.—Power of superior rectus, 2°; power of inferior rectus, 2°.

Left Eye.—Power of superior rectus, 2°; power of inferior rectus, 2°.

2. The images were shown to be in the same horizontal plane when homonymous diplopia was caused. The power of the vertical muscles was as follows:

Right Eye.—Power of superior rectus, 1°; power of inferior rectus, 1°.

Left Eye.—Power of superior rectus, 1°; power of inferior rectus, 1°.

3. Examination for hyperphoria discovered the fact that the *left* image stood *higher* than the *right.*

Right Eye.—Power of superior rectus, 3°; power of inferior rectus, 2°.

Left Eye.—Power of superior rectus, 2°; power of inferior retus, 2°.

As stated by Dr. Stevens, when the left image stands higher than the right there is *right hyperphoria.* It will be seen above that the vertical muscles of the left eye are in a state of equal tension. This eye is, then, the standard from whose plane the other deviates. It will be seen that the power of the superior rectus of the right eye is 3°. This gives an upward tending to this eye, and the adjective *hyperphoric* applied to the right eye is in this case eminently correct. As the right eye is inclined upward by the over-power of the superior rectus, the image of the object falls upon the retina above the macula lutea, and hence is projected to a plane lower than that of the image of the left eye. It was stated that the left image stood higher than the right. It might also be stated conversely that the right stood lower than the left. In the "Treatment of Hyperphoria" it has been stated that, in this condition, that muscle should be tenotomized which forces the eye out of its proper direction; that in right hyperphoria, as in the above-cited instance, one may tenotomize the superior rectus of the right eye or the inferior rectus of the left; that the superior rectus is, as a rule, preferable. To tenotomize the inferior rectus of the left eye in the above-mentioned case, according to the demonstrations of this paper, would be unreasonable, for then equal tension in each eye would be disestablished, and, assuming that 1° is taken from the muscle by the tenotomy, there would remain the following valuations:

Right Eye.—Power of superior rectus, 3°; power of inferior rectus, 2°.

Left Eye.—Power of superior rectus, 2°; power of inferior rectus, 1°.

Apparently the evil would not be remedied by such a procedure. A tenotomy of the superior rectus of the right eye would be the correct procedure in this case, and, assuming that exactly 1° was removed from its power, there would then exist equal tension in each eye.

4. Examination for hyperphoria revealed the fact that the left image stood higher than the right. The following valuations were found:

Right Eye.—Power of superior rectus, 1°; power of inferior rectus, 1°.

Left Eye.—Power of superior rectus, 1°; power of inferior rectus, 2°.

The left image stood higher than the right; according to the teachings extant, the diagnosis of *right hyperphoria* should be made.

It will be seen that there is equal tension of the muscles of the right eye; the left eye is here at fault, and the guilty muscle is the inferior rectus. By its overtension it pulls the anterior pole of the eye downward, and consequently the posterior pole is rotated upward; the image, falling below the macula lutea in this eye, is projected higher than the image of the right eye.

Shall the diagnosis of *right hyperphoria* be made in this case? The diagnosis should be *left hypophoria.* According to the present teachings, it would be best to tenotomize the superior rectus of the right eye, for it was found that the left image stood higher. But the fact that the left image stands higher is not due to the tending of the right eye upward, but to the tending of the left eye downward. Clearly there could be only one reasonable operative procedure, and that would be tenotomy of the inferior rectus of the left eye.

If a suppositional power of 1° could be taken away from the inferior rectus of the left eye, equal tension of the muscles of each eye would be established.

That the facies of a person will at times give some idea of the existing refractive condition of the eyes is well recognized. A flat face is said to indicate the probability of hypermetropia; a prominent face, the probability of myopia; asymmetry of the face, the probability of astigmatism.

Recently, in making examinations for hyperphoria, I have observed that the eyes are frequently situated in different horizontal planes in the skull. After my attention was awakened, I observed numerous cases in which the difference was most striking, and have come to wonder how I could have failed to remark it before. If any one has called attention to this fact before, in connection with insufficiency or supersufficiency of the vertical straight muscles, I am not aware of it.

Now, if the eyes are situated in different horizontal planes, and equal tension of the vertical muscles of each eye exists, it is evident that the same image can not be formed on the macula of each eye. If, for instance, the right eye is situated higher in the head than the left, an image which is formed on the macula of the left eye will be formed *below* the macula of the right eye, equal tension of the vertical muscles being supposed. The right macula under such circumstances should be rotated downward in order to catch the image; this can be done by an overtension on the part of the superior rectus of the right eye. Such overtension can not be regarded in the light of guilt, but rather as an honest effort on the part of the superior rectus to furnish its master with single binocular vision. I select two cases of this condition of affairs.

5. The right eye was situated higher in the skull than the left. Horizontal homonymous diplopia having been caused, the left image was found to be the higher.

Right Eye.—Power of superior rectus, 2°; power of inferior rectus, 2°.

Left Eye.—Power of superior rectus, 2°; power of inferior rectus, 3°.

The right eye must be accepted as the standard; an image that falls on its macula must fall *above* the macula of the left eye, were it not for the inferior rectus of the latter, that pulls the eye downward and carries the macula upward to meet the image at the trysting-place. In this way single binocular vision is attained by an overtension on the part of the inferior rectus of the left eye. An operation upon either the superior rectus of the right eye or the inferior rectus of the left would be quite out of the question. This patient had been examined by two other gentlemen, and the diagnosis of *right hyperphoria* had been made by each; one suggested clipping the tendon of the superior rectus of the right eye.

Although the patient had a considerable refractive error (H), he had no symptom of asthenopia save a little heaviness of the eyes at night when reading.

6. The left eye was situated in a higher plane than the right. Homonymous diplopia having been caused, the right image was found to be the higher.

Right Eye.—Power of superior rectus, —1° (= less than 1°); power of inferior rectus, 1°.

Left Eye.—Power of superior rectus, 1°; power of inferior rectus, 1°.

A prism of 1° with its base placed upward over the right eye was overcome. Prism 2° could not be overcome. Prism 1°, with its base down over the same eye could not be overcome; value of superior rectus less than 1°.

The left eye must be taken as the standard; this eye lay higher in the skull than the right. An image that falls upon the macula of the left eye will fall above the macula of the right. The superior rectus of the right eye, appreciating the condition of affairs, gracefully yields, thereby permitting its opponent to pull the eye downward and throw the macula upward till single binocular vision is attained.

This patient evinced refractive errors in both eyes and complained of asthenopia on reading at night. The errors were corrected and relief was given. I have in my record-book twenty-three cases in which I have made the examination for "hyperphoria." The position of the images has been explained in all save three. In one of these I found equal tension in the muscles of each eye, but one image stood higher than the other. This may be accounted for by an unintentional twisting of the displacing prism. In the two others there seemed to be irregular clonic contraction of the vertical muscles, as was attested by different valuations obtained on several occasions.

A difference in the height of the eyes has been observed in five cases. I had not commenced to observe this peculiarity till I had made fourteen examinations for "hyperphoria." Of the above-mentioned five cases, three have been marked by compensatory overtension on the part of one of the vertical muscles. The two others are anomalous.

I cite one of the latter:

7. The left eye lies in a higher plane than the right. The left image is found to be higher than the right.

Right Eye.—Power of superior rectus, 2°; power of inferior rectus, 1°.

Left Eye.—Power of superior rectus, 2°; power of inferior rectus, 2°.

We must accept the left as the standard eye. As the left eye lies higher than the right, an image that falls upon its macula ought to fall *above* the macula of the right eye. We should expect the inferior rectus of the right eye to show the greater power, but it does not. The compensation for the difference in height of the eyes is not shown in this case.

Of the five cases in which there was a difference in the height of the eyes, the left eye lay higher than the right in four instances.

Although *every* case of hyperphoria examined by me has not been satisfactorily explained by the method of examination herein suggested, nevertheless it seems to me that a sufficient number have been explained to warrant the statement of results. Anomalies in the action of the ocular muscles are not infrequent, and under the circumstances we must look to such conditions for the explanation of some results.

1. There is a condition in which the eyes lie in the same horizontal plane, the tension of the vertical muscles of each eye is equal, and the visual lines lie in the same plane.

For the want of a better term I would call this condition *isophoria* (ἴσος, equal; φόρος, a tending).

2. There is a condition in which the eyes lie in the same horizontal plane, the tension of the vertical muscles of one eye is equal, and that of the same muscles of the other eye is unequal. Under such circumstances the visual line of one eye tends to deviate from that of the other, which is the standard; if the deviation is downward, the condition may be called *vicious hypophoria* of that eye; if the deviation is upward, the condition may be known as *vicious hyperphoria* of that eye.

3. There is a condition in which one eye is situated higher in the skull than the other; there must be a compensatory overtension of one vertical muscle in such cases, in order to accomplish single binocular vision. Such overtension should not be considered as *vicious*, but rather as *compensatory*.

The terms *compensatory hyperphoria* and *compensatory hypophoria* may then be applied to any appropriate case that comes under the latter condition.

It has not been my purpose to discuss the merits of the treatment of "hyperphoria"; I have never operated for it, nor should I till I had excluded all other means of treatment, for it must require consummate judgment to know just how much to loosen the grasp of the vertical muscles, ordinarily so much weaker than the lateral ones.

I was led to think on this subject particularly on account of the uncertainty which surrounded the detection of the over-tense muscle.

If the conclusions arrived at have the color of *ex cathedra* statements, I would say they are not intended as such, but have been made as apparent conclusions from the protases. I sincerely hope that the method of examination may be employed by others, in order to test the correctness of the hypothesis.

Justitiæ causa, I wish to state that the idea of getting the values of the vertical muscles separately was suggested to me by Dr. N. J. Hepburn, of this city, in the course of a conversation concerning the apparent inexpediency of operating for a condition caused by the overtension of a muscle which could not be pointed out with accuracy.

130 LEXINGTON AVENUE.

THE VALUE OF "ALEXANDER'S OPERATION" IN CASES OF COMPLETE PROCIDENTIA OF THE WOMB.*

BY CHARLES CARROLL LEE, M. D.,
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I PRESUME that no member of my audience at all interested in gynæcology is unaware of the fact that "Alexander's operation" means the procedure of shortening the round ligaments of the uterus; and that this "consists in cutting down upon the external abdominal ring on either side, catching up the fibers of the round ligament there discovered, pulling out as much of them as suffices to draw the displaced uterus up behind the pubic arch, and then stitching the shortened ligaments to the pillars of the abdominal ring." (Dr. W. Reid, in Ninth International Medical Congress.)

Since Dr. Alexander, of Liverpool, first performed this operation on December 14, 1881, and since he and Dr. Adams, of Glasgow, more fully described it in 1882, six years have elapsed. During this time, in spite of much hostile criticism, it has steadily grown in favor; and now it may fairly be termed an acknowledged resource in many cases of otherwise intractable displacement of the womb. But the displacement to which it has been confined is *retroversion*, or retroversion with prolapse; and I am not aware that Dr. Alexander or his followers, with perhaps a single exception in this country, have thought it applicable to cases of *complete procidentia*. At least, I can find no assertion to that effect in his published writings; and in a very able paper upon this general subject by Dr. Doléris, of Paris, read before the last meeting of the American Gynæcological Society, the author inferred from numerous cases quoted from his practice that, although the round ligaments were most useful for simply anteverting the uterus, they were useless for support. As this paper was read in French and has not yet been published,† I may possibly have misunderstood him; but this was my inference.

In the "Australian Medical Journal" of October 15, 1886, Dr. William Gardner, of Melbourne, details a large number of cases, among which was one "of extreme prolapsus"—probably complete procidentia—which, however, was not successful. From the author's comments I infer that he also shares the views attributed to Dr. Doléris.

In performing about a score of operations for shortening the round ligaments I have found reasons for dissenting absolutely from this conclusion, as I think the following cases will show. In each of them all the ordinary devices for curing the procidentia had been resorted to without success; all the patients had worn pessaries for months or years, and had had operations of posterior colporrhaphy or for laceration of the perinæum. In two of them an extensive laceration of the cervix, which, as Dr. Emmet has demonstrated, is often the precursor and one of the main factors of procidentia, had been carefully repaired. The choice of method in a new attempt at cure seemed therefore to lie between Le Fort's operation, which was admissible only in one who had passed the menopause, and some effective adjunct to or substitute for a new perineorrhaphy. Believing this could be accomplished by Alexander's operation, I did it in each case, in addition to posterior colporrhaphy, as follows:

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* Read before the Medical Society of the State of New York, February 7, 1888.

† Since published in full in the last volume of the "Trans. of the Am. Gyn. Society."

Case I.—M. V., aged thirty-two, married twelve years, multipara, was admitted to my service in the New York Woman's Hospital, May 7, 1886. She had been sick ten years. She began to menstruate at fourteen; since then menstruation had been normal. Her first labor was very difficult and protracted, her fourth labor was instrumental, and after this her physician said she was "somewhat torn"; there had been no operation for repair. During her fifth (and last) full pregnancy—before which two early miscarriages had occurred—the womb gradually prolapsed until, about the eighth month, it was completely procident, and her last child was born with the cervix "and about four inches of the womb" projecting from the vulva. Since then it has never entirely returned to the vagina.

When she was admitted to the hospital there was still complete procidentia, with marked laceration of the cervix and perinæum, relaxation of the vaginal walls, and much dragging pelvic pain, which was greater on the left side. Both ovaries were prolapsed. Her general health was otherwise good. After a week's preliminary treatment, Dr. B. F. Dawson, then one of my assistant surgeons, at my request, closed the cervix and perinæum, and, as I thought, in the most effective manner. Good union was obtained, and in four weeks the patient was discharged apparently cured, but wearing a well-fitting pessary as a precaution. This hope, however, proved fallacious. The posterior wall again gave way; the uterus gradually prolapsed, forcing out the pessary; and in six months the procidentia was as complete as before. In this condition I sent the patient, much discouraged, again into the Woman's Hospital, where she was readmitted October 6, 1886. The womb was still much enlarged—four inches deep when *in situ*, six and a half apparently when prolapsed. The proctocele had returned. For a week astringent tampons were carefully employed, the patient's constipation was gradually overcome, and on October 14th I performed Alexander's operation in the presence of Professor Winckel, of Munich, and others. The round ligament was easily found on the left side; with much difficulty on the right, where also it seemed much shorter. This was carefully drawn out two inches and a half, and the left four inches, while the uterus was elevated on a sound: the ligaments were carefully stitched with fine carbolized silk to the columns of the abdominal ring and *to the periosteum of the spine of the os pubis*, which I think an important additional safeguard; a bone drainage tube was inserted on each side, and the wound closed antiseptically with catgut.

The uterus was now firmly moored behind the arch of the pubes, and considerable traction, by a tenaculum inserted into the posterior lip, failed to dislodge it in the least. As a precaution, however, a retroversion pessary was adjusted, to be worn until the wound should have quite healed. On the following day there was much pain, for which a hypodermic injection of morphine was needed. On the third day menstruation unexpectedly appeared, but in no way complicated the situation. By the end of the fourth day the left wound had healed by first intention, and the drainage-tube was quite absorbed; on the right side the union was slower and by granulation, and was not complete until the eleventh day. The pessary was now removed, but the patient was still kept in bed; the womb remained in perfect position, exactly behind the pubic arch; and the vagina, which had been slightly irritated by the large pessary, was prepared for a fresh perineorrhaphy. On November 1st, two weeks after the Alexander's operation, this was done with cocaine injections along the perinæum and posterior vaginal wall. Ether was avoided for fear of the subsequent vomiting, and the perinæum was firmly closed with catgut sutures above and silver wire below.

November 19th.—The sutures were removed from the perinæum, which had firmly healed.

29th.—The uterus was still unmoved, but quite large and hypertrophied. A large pessary was now reapplied, and the patient allowed to sit up and walk.

December 6th.—A smaller pessary was substituted, and the patient discharged cured. The womb was still close behind the pubic arch; the perinæum and posterior vaginal wall were normal; but, as an additional precaution, the pessary was directed to be worn for three months. At the end of this time it was removed, and then and since, up to the present, there has been no return of the displacement.

Case II. *Private Case.*—E. H., aged forty-eight, multipara, has been sick since her last labor, six years ago. For three years the uterus has completely protruded, and the vaginal walls are now extremely relaxed and redundant. Two years ago she had trachelorrhaphy and perineorrhaphy performed; the former of these succeeded, but the latter quite failed. Her uterus is four inches deep, quite movable, and easily replaced, and she suffers constant discomfort. On June 20, 1886, Alexander's operation was performed. The ligaments were easily found and shortened four inches and a half, and secured, as in the former case, to the periosteum of the pubic spine, and a retroversion pessary applied. The wounds were closed antiseptically, with bone drainage-tubes; they healed in ten days, both slightly granulating.

July 2d.—Posterior colporrhaphy was performed with silver sutures and cocaine injections, and a smaller pessary was substituted.

The patient remained in bed a month from the date of the second operation; the perineal sutures were removed on the twelfth day, when union was found fairly good throughout, two of the upper sutures cutting loose. In one more week the perinæum was quite healed. Astringent injections of boric acid were now employed twice daily, and with their use the vaginal walls were much constricted. Slight cystocele only remained when the patient stood erect, and in two months this had nearly disappeared. A year after the operation she was again carefully examined in the recumbent and standing positions, and was still quite well.

Case III.—M. E., aged forty-one, widow, multipara, was admitted to the Woman's Hospital, March 5, 1887. She had been sick three years; had laceration of the cervix and perinæum, large cystocele and proctocele, and complete procidentia. The latter was complicated and increased by the superincumbent pressure of a large subperitoneal fibroid. She had much pelvic pain, dysuria, "bearing down" or dragging discomfort in standing, and, when the uterus protruded, pain in walking and sitting. She was pale, her appetite was poor, and her general nutrition was below par. She had worn pessaries of various kinds, and a year before had had some operation done (probably perineorrhaphy) in St. Luke's Hospital, which seemed not to have succeeded. The depth of the uterine cavity was now five inches and a half. After a few days' preparation a preliminary operation to close the lacerated cervix was done on March 10th. The cystocele was not touched, as it was hoped that, by diminishing the uterine bulk and pressure, that would recede spontaneously.

In this we were disappointed, for the large uterine fibroid greatly interfered with the usual process of involution. On March 20th union in the cervix was complete, and the sutures were removed; the cystocele was unaffected, and the procidentia, of course, as before. I now decided to perform Alexander's operation and close the perinæum securely at the same time, and on March 24th this was done. The round ligaments on both sides were easily found, and were unusually large and strong, possibly from the greater development of all the uterine tissues caused by the stimulation of the fibroid. They were drawn out fully four inches and firmly sewed with fine carbolized silk to the columns of the ring and the periosteum of the pubic spine. The wound was closed, as usual, with catgut sutures over a bone drainage-tube, dusted with iodoform, and covered with iodoform gauze and a figure-of-eight bandage.

To save the patient a subsequent operation, both anterior and posterior colporrhaphy were now performed at my desire by Dr. Horace T. Hanks, who found it necessary to insert an unusual number of sutures in the relaxed posterior wall. At the termination of this long operation the patient seemed much exhausted, and continued rather feeble for some days.

On April 4th the perineal sutures were removed, as much sloughing had occurred. On April 7th there was much suppurative discharge from the perinæum, where some deep sinuses were discovered; the patient showed great failure of strength. At this time, and for ten days later, she gradually developed all the symptoms of septicæmia; she was drowsy, stupid, at times delirious, but always with a low, muttering delirium, with feeble pulse, and a temperature varying between 99° and 102° F., but always above the normal.

From this alarming condition she slowly reacted and the perineal wound as slowly granulated; those in the groins from the first did better, and on the fourteenth day after the operation union there was found complete. During all these ominous complications the uterus remained firmly *in situ* behind and above the pubic arch, nor was even the unusual weight of the fibroma sufficient to dislodge it.

Finally, on April 24th, a month after the operation, as the patient was still much impaired in her general health and very troublesome, she was discharged, improved, but not cured. I have lost sight of her since.

In this case it is obvious that I attempted too much at one sitting, or else that I miscalculated the patient's strength. As a rule, my judgment is opposed to double or multiple operations, although, from example, or the force of habit, or to save my patient's time and the annoyance of two anæsthetizings, I often perform them. In this I know I differ from some of my friends whose intelligence I highly regard—Dr. Polk, who is here present, Dr. Doléris, whom I have lately quoted and whose rule is the opposite, Dr. James B. Hunter, my colleague at the Woman's Hospital, and others. I simply state my own opinion, and I am convinced that if, in the case last detailed, I had done Alexander's operation first and the perineorrhaphy later, with a suitable interval between them, the result would have been as gratifying as in the two former. As it is, it can scarcely be thought a failure, and under exceptionally discouraging circumstances it contributes, with the preceding cases, to demonstrate that by Alexander's operation we may often hope to cure the most extreme conditions of *procidentia uteri* which have resisted all other measures.

Since the foregoing was written I have found in the Boston "Annals of Gynæcology" for December, 1887, an excellent paper by Dr. J. H. Kellogg, of Michigan, upon the indications of Alexander's operation, in which two cases of complete procidentia are narrated as so treated—one successful, one a failure; and also in the same journal a briefer hospital report by Dr. F. L. Burt, of Boston, of two more cases similarly treated, and both cured.

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URETHRAL CARUNCLE:

ITS ÆTIOLOGY AND PROGRESS.*

By JOHN G. PERRY, M. D.

Under this term are classified *all* excrescences that present themselves at the mouth of the female urethra; and, owing to this, great confusion has arisen among different writers on the subject on account of the different appearances which they present, the variety of symptoms produced, and the embarrassment attending their treatment.

It has likewise received the names of "irritable urethral caruncle," "vascular tumor," and "irritable vascular excrescence," each chosen to represent the conditions attending the individual cases presented to the writer. Pepper, in his "System of Medicine," says: "It is the most common neoplasm known." Thomas (T. G.), in his work, says of irritable urethral caruncle: "Of the ætiology of this affection (edition of 1881) nothing is known." These remarks have given origin to the paper I now present. I give it in the light in which I have studied it, and hope to convey a little of the satisfaction I have derived from it.

It can not be a *very* common affection, I fancy, for in all my hospital experience (in the Woman's and Charity Hospitals) I met with it but once to notice; in my twenty or more years of membership in the Obstetrical Society I have never heard the subject discussed; and, in reviewing the text-books on diseases of women, I find its explanation vague and unsatisfactory.

To those who are familiar with the growths they appear either as of a somewhat elongated figure, a scarlet or bluish-red color, a spongy texture, the surface smooth, marked with shallow indentations, and covered with epithelium, or as a single round tumor or a cluster, bleeding readily and very irritable; or, again, in another form as a conglomerate of mucous membrane, cysts, and vascular tumors, with new formations crowded together and climbing upward toward the clitoris. This is the most formidable, and may attain any size, but each and all are products only, and the result of a process.

Chronic inflammation of the urethra with proliferation of the underlying connective tissue has done the work in some part or the whole of the urethral canal.

Thomas has attempted to differentiate between irritable urethral caruncle, urethral venous angeioma, and prolapsus urethræ, but they all have a common origin, and assume their various characters only through the conditions attending the age, temperament, and causes giving rise to the original inflammation. A specific cause will give rise to specific characteristics. An anæmic urethra stretched and bruised by frequent labors and soaked with vaginal discharges will give rise to one form, while an unstretched, firm urethra, irritated by long retentions of lithiated urine, will present another.

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* Read before the Alumni Association of the Woman's Hospital in the State of New York at its fourth meeting.

Let me illustrate:

During a summer visit to Boston I was asked to go to a neighboring city to see a lady who wished to consult me. She was a pluripara, exceedingly depressed, her nervous condition amounting almost to melancholia, but for the previous week or more had suffered annoying symptoms from the bladder, such as tenesmus with frequent and painful micturition, weight, and inability to stand. These symptoms had persisted night and day and no relief had been found. The urine being clear and without sediment, I asked permission to make a vaginal examination. I can not describe the feeling of the urethra from the vaginal orifice better than to say it felt as if an India-rubber tube was lying within its canal, not very but somewhat tender under pressure. A probe passed readily and with little pain. Nothing presented at the orifice. I pronounced it a cellular inflammation, and expressed the belief that, if relief by treatment was not speedily given, an irritable caruncle would result, to all of which the doctor in attendance agreed. About ten days subsequently the patient arrived in New York and sent word asking me to call upon her. The physician had not strictly complied with the agreement to give treatment every second day, owing to a large and scattered practice. The patient's sufferings had increased, and to the former symptoms had been added that of inability to bear the contact of her clothing or of the bed-clothes. At the orifice of the urethra I found a little red vascular tumor. The meatus was swollen, bulbous, shining, and irritable, while the urethra had shortened quite half an inch.

In ten days from the time I began treatment the vascular tumor had disappeared, but sleep without medication was restored in two. I simply put out the *fire.*

This case was typical of the origin and development of the irritable vascular excrescence. The patient, though a pluripara, had all her tissues firm and intact, but the temperament was viciously nervous, and was provoked by hydræmia.

Let me contrast this with a case that developed caruncle with prolapse of urethral mucous membrane.

Mrs. L., from Albany, also a pluripara, fifty years of age, had never complained of the bladder or urethra till some days before consulting me. She was driving with her husband, and a wheel rolled from the wagon and dropped them to the ground. She was obliged to walk to her home, some three miles distant, and, before reaching the house, was seized with an urgent desire to relieve the bladder. This desire increased, and, when she was able to get relief, micturition was attended with pain and tenesmus.

The physician was called, who made an examination, but found nothing to account for the symptoms, and treated her for shock. Not securing relief, she came to this city and consulted me. I found the uterus in the first stage of prolapse, the vaginal walls relaxed, the urethra very much shortened, the meatus swollen, red, and tender, and exposing a mass of mucous membrane, cysts, and vascular polypi.

Here is an instance of relaxed anæmic tissue swarming with bacteria and *Trichomanes vaginalis*, where old chronic urethritis had existed from time to time, and the redundant cellular elements were suddenly ignited.

With such cases it is not uncommon to find caruncles of large dimensions existing without giving rise to any noticeable symptoms.

Now let us search the authorities and see what ground there is for regarding these products as the result of a pre-existing cellular inflammation or hyperplasia.

George T. Gream and H. B. Norman, who wrote as early as 1852 and at great length, touched only upon the vascular tumors of the orifice and their destruction, without examining their relation to the deeper structures. Burns and Sir Charles Clark, writing a little later, say: "Little has been made out in relation to their intimate structure."

Lee says "they are entirely made up of vessels and connective cellular tissue."

Boivin and Dugès call them cellulo-vascular.

Mr. Queckett, who examined a specimen microscopically, says: "They exhibit the same structure as ordinary cuticle on their outermost layer, but beneath the cut surface the cells of deeper structures, but more condensed and firmly adhering."

Richet, who does not describe the intimate structure, confines himself to the remark that "mere excision will not remove the contraction and hypertrophy of the urethra."

Scanzoni believes they result from chronic urethritis.

Wedl, who has given the subject the most attention and written the most graphic description of these bodies in his work on "Pathological Histology," says he regards them as papillary new formations of connective tissue.

The most interesting point found in his examination of one was the distribution of the blood-vessels, which could be distinctly traced in transverse sections—interesting because, as Wagner says, new formation of blood-vessels occurs with new formation of other tissues, especially connective.

Why, now, if these bodies of new-formed tissue are made, should they present themselves so prominently at the orifice?

Let us look at the anatomy of the female urethra. In the first place, it is divided, anatomically, into three sections, the first commencing behind the symphysis pubis, to which it is suspended by the apparatus which supports the neck of the bladder. Its next division is directly beneath the inferior pubic ligament, and is connected to it by condensed cellular membrane. The third portion passes between the origins of the crura clitoridis and terminates at the meatus.

Here we have three divisions, and all suspended *from above.* It is invested with a muscular apparatus; thus Santorius describes transverse and circular fibers, the latter being situated deepest, the former passing over the canal. So also are seen vertical fibers arising from the back of the symphysis pubis, and analogous to Wilson's muscles in the male. Guthrie has also described a muscle arising from the rami of the pubes, splitting into an upper and lower part, and thus completely surrounding the tube. If the urethra is laid open, its mucous membrane is seen thrown into longitudinal folds with valliculæ or depressions between them. Some of the plicæ are larger than the rest; there is usually one large fold along the posterior wall and one on either side. Besides these there are other folds which, when the urethra is closed, dovetail into corresponding depressions, so that, with suspension from above, with muscular fibers running in such directions as to force the contents of the tube onward and forward, these rugæ or folds of the mucous membrane, loosened at their base by new formations, must be crowded onward and forward toward the outlet also, where there is least resistance.

If the matrices of the vessels are first involved, and are pushed upward, where they can increase and divide, stimulated below and fed with new material, of course they will present themselves first, and thus we have presented to us the flotsam and jetsam of a wreck beneath. For every new formation of vessel there is a fiber of nerve to become exposed and rendered sensitive.

AN ANALYSIS OF
ONE THOUSAND CASES OF HERNIA
OCCURRING IN PRIVATE PRACTICE, AND THE RESULTS OF MECHANICAL TREATMENT.*

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I wish to present to this society a brief analysis of one thousand cases of hernia attended in private practice under particularly favorable opportunities for observation and study.

The patients have, as a rule, been of the better class, who were able to present themselves as often as necessary for attention and inspection. A large proportion of them have been under observation for from five to ten years, and others even a longer time. The treatment of the cases here reported has been exclusively mechanical, and any of the patients that have submitted to operations for radical cure did so before coming under the care of the speaker.

The thousand patients consisted of 839 males and 161 females, presenting 1,185 reducible and 18 irreducible hernias. The youngest of these patients was two weeks old and the oldest eighty-five years of age. One hundred and sixteen children under five years of age were attended, while in the second ten years of life—*i. e.*, from ten to twenty years of age—only half that number are recorded.

The largest number were between thirty and forty years of age. Out of the 1,203 hernias, 1,169 were of the inguinal variety, 745 being single and 212 double; 100 were incomplete protrusions, entering the upper part of the canal but not passing through the external abdominal ring; 630 were complete, passing through the external abdominal ring and ranging in size from that of a hickory-nut to that of one's fist; 414 hernias had by neglect become scrotal, some of them of enormous proportions.

Direct inguinal hernia was met with only twenty-five times. This classification does not include those hernias which become direct by the dragging down of the internal ring until it is approximate to and immediately back of the external ring, but refers exclusively to hernias which were originally direct.

Femoral hernia was observed in 63 instances, one third of the cases being in the male; one man and three women had inguinal and femoral hernia occurring on the same side. One boy seven years of age was under care for femoral hernia, and the author of this paper has found no previously recorded case occurring in so young a male. Forty-seven cases of umbilical hernia, occurring mostly in very fat women, and six cases of ventral hernia will be found in the table (shown at the meeting).

Ventral hernias following laparotomy have of late years been very frequently met with, but are not reported in this paper.

Among the cases tabulated were found 18 irreducible hernias; 11 of these were scrotal, 3 femoral, and 4 of the umbilical variety. Ten of these were subjected to systematic attempts at reduction, proving successful in seven, and reported before the New York Academy of Medicine, December 15, 1887. (See the "New York Medical Journal" for January 21, 1888, page 68.) In 257 instances it was found that hernia had existed less than one year, in 333 between one and five years, in 510 from five to twenty years. Strangulated hernia had previously occurred in 29 patients. In 12 of these cases reduction had been accomplished by means of anæsthesia and taxis; in 17 these means had failed and an operation had been resorted to.

It is desired that special note should be made of the fact that less than one half of these patients were relieved by taxis as a strong point in favor of early operative interference.

I have no means of ascertaining the death-rate resulting from delay and lack of operation in cases of this character, but I am confident that nearly all operating surgeons will agree to the statement that it is unnecessarily large, and that at the present time the operation for the relief of strangulated hernia is comparatively free from danger; certainly forty-eight or even twenty-four hours' delay subjects the patient to a far greater risk than the operation during the first twelve hours does.

Of the 1,000 patients, 39 had previously failed in obtaining cures by radical operations to which they had submitted. It seems rather a remarkable fact that there were only 11 cases in which the hernia had recurred after once having been cured by mechanical means; 6 recurred within from one to five years after leaving off support; 7 returned after from five to twenty years. This fact leads to the belief that the tendency of hernia to recurrence in the same subject after supposed cure is not so strong as is generally believed. This erroneous opinion can, it would seem, be easily accounted for. All previous statistics bearing upon the recurrence of hernia, so far as known to the speaker, have related to its surgical treatment exclusively. Those operated upon have had extreme cases, and therefore been very liable to a recurrence. Under our present antiseptic surgery the mortality risk is reduced to the minimum. Operations are being done in ordinary cases of hernia, and as a result we shall see a smaller percentage of recurrence.

In 18 cases hydrocele of the tunica vaginalis was found as a complication of existing hernia; 11 cases were complicated by hydrocele of the cord, and in some instances it made the diagnosis very difficult. Congenital hydrocele was found in 15 cases, and usually added materially to the difficulties of treatment, as the fluid returned to the abdomen in the recumbent position, and again appeared in the scrotum when the patient was standing. It was found that this fluid usually disappeared within the first six weeks without special treatment. Retained and partially developed testicles were met with in 22 cases. In three of these patients the testicle was so high in the inguinal canal that it was necessary to return it to the abdominal cavity with the hernia. In one where the testicle was adherent a concave pad was applied. The remainder were treated by adjusting a very small truss-pad over the internal ring, so that protrusion of the bowel into the canal was prevented and the testicle was allowed to descend gradually into the scrotum.

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* Read before the Medical Society of the State of New York, February 7, 1888.

Varicocele has been so commonly met with that ordinarily no note has been made of it. In fifteen cases, however, it was of such an extreme character as to make the diagnosis difficult, or the treatment troublesome. Curling has advised that a truss be worn by those suffering from varicocele, but the speaker has never seen a varicocele improved by truss-wearing.

Varicose lymphatic vessels have formed a most perplexing complication in five cases. Cyst of the round ligament was found in four cases, and an ovary in the inguinal canal was found in seven females. Small fatty tumors—lipomata—were met with in three cases, a tubercular testicle was found in one, and a cancerous testicle in one.

Abdominal dropsy has been a complication of hernia in seven cases, and has in one or two made the abandonment of mechanical treatment necessary. A small accumulation of fluid in the abdominal cavity will soon manifest itself in the hernial sac; its retention can not be accomplished by any truss, and the patient naturally feels that the hernia is protruding and should be held.

The occupation of the patient and the supposed cause of the hernia have usually been recorded, but do not enter into the table shown, as very little valuable information has been obtained therefrom. A common cause in infancy is constipation; tight bandaging is another. Five cases seemed, beyond question, to have been caused by phimosis, and were rapidly cured after circumcision.

The question of inheritance has been pretty closely followed, but with no very definite result. In some families the tendency is unquestionable, and when such predisposition exists a permanent cure by any means is considered impossible.

In classifying the results of treatment, five headings have been adopted. Under the head of cured, none have been numbered that have not been more than six months without any form of support; many of them have been several years.

By the second heading—improved—is meant that there has been marked improvement in the case, that the patient is wearing a lighter truss than was at first necessary to control his hernia, and that he is in every respect comfortable and free from danger.

Under hernias retained are included all those cases which have, although under control, shown no signs of improvement. Some of these patients, who have all been instructed to use the utmost caution, have not seen their hernias for months, but as soon as they remove the truss in the upright position a protrusion will occur. With this explanation the classification will, it is thought, be understood.

Out of the entire number of hernias, 1,203, a little over one quarter (or 336) have been cured, and, as shown by the table, 463 were improved, 312 were retained, 5 were abandoned as unmanageable, and in 87 the result was unknown.

The study of the foregoing cases leads to the following conclusions:

1. That by early mechanical treatment a large percentage of hernias occurring under middle age can be cured.

2. That, while there is no intent to underrate the value of surgical measures in suitable cases, it is believed that the greatest relief to the greatest number can be afforded by the more careful and scientific mechanical treatment of hernia.

3. This end can only be attained by the personal attention of the practitioner, instead of allowing such cases to go into the hands of unprofessional and incompetent persons.

56 West Thirty-sixth Street.

Burial Reform.—All who have seriously considered the disadvantages attending our present methods of interment will regard with satisfaction the efforts of the Church of England Burial Reform Association. We need only now select three of the specific reforms which the society has set itself to accomplish in order to illustrate the orthodoxy of its views on this important problem in sanitation. These are (1) timely instead of delayed burial, (2) the use of readily perishable coffins, and (3) selection of a soil appropriate to the purpose of burial. The first of these desirable changes, we fear, has hitherto been somewhat overshadowed by the prominence in discussion assigned to the two latter. It is, nevertheless, itself an important matter, and particularly so, for obvious reasons, in cases of death from infectious disease. Thanks to the normal coolness of our climate, its claims to public notice have hitherto been less regarded than they well might have been. It is never too late for improvement, however, and we shall feel obliged to the association if its efforts to encourage the early burial of the dead are instrumental in altering common usage in this particular. The pressing necessity for a general disuse of the solid wooden coffin, still so common, in favor of a light case, which will hardly impede the carrying out of the sanitary injunction, "earth to earth," we have insisted on in many former issues. On this point the society need fear no scientific opposition, but only the dead weight of ignorant custom. The question of soil is a somewhat large one, connected as it is with those of the inclination of land, the course of streams, relative position of dwellings, and other matters which are or ought to be considered in laying out ground for purposes of burial. The space at our disposal will not allow us to discuss it at length. We need only now refer to permeability, moderate dryness, and a general slope sufficient to insure the gradual subsidence of water due to rainfall, as qualities necessarily associated with a suitable soil. We publish in another column an abstract of a paper on "Burial Reform" read by Mr. Lowndes at Liverpool, in which the urgent need of changes in the present method of burial is strongly enforced.—*Lancet.*

Auditory Allochiria.—"Allochiria, first described by Obermeister in 1882, consists," says the "Lancet," "in the perception of a sensation in the opposite side of the body to that on which the excitation was made. Tabes dorsalis and other spinal diseases afford the most frequent examples of it. M. Gellé has observed in a young person affected with chronic hyperplastic otitis and auditory hyperæsthesia of the left side, but not presenting any sign of paralysis, hysteria, or tabes, an auditory allochiria, consisting in the fact that the patient heard on the left side a piping sound produced in the right carotid artery under the influence of the least effort or of the slightest emotion!"

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by
D. Appleton & Co.
Edited by
Frank P. Foster, M. D.

NEW YORK, SATURDAY, MARCH 3, 1888.

THE LOOMIS LABORATORY.

Each of the four large medical schools of New York and Brooklyn is now provided with ample laboratory facilities, not only for mere undergraduate teaching, but for purposes of research as well. It is but a short time since such a state of things seemed utterly impossible of attainment within at least a quarter of a century. But the unexpected—we might almost say the unhoped for—has happened. Mr. Andrew Carnegie, as our readers are aware, furnished the Bellevue Hospital Medical College with the laboratory that bears his name, and that has already been the scene of work of enough practical advantage to the people of New York to have made it a paying investment for them had it been established and maintained at the public expense; the generosity of the Vanderbilts has enabled the College of Physicians and Surgeons to provide improved quarters for the laboratory of its Alumni Association and give it increased efficiency; Dr. Hoagland has equipped the Long Island College with the excellent laboratory known by his name; and an anonymous friend of science and humanity has now the gratification of knowing that his liberality has resulted in the construction and equipment of a like institution for the Medical Department of the University of the City of New York, called, in honor of one of its most renowned professors, the Loomis Laboratory.

In the main, these facts are already well known to our readers, but it is well to recall them in their chronological order, for it serves to emphasize the gratifying statement that, whereas in the early part of the present decade not a medical school in this community possessed the means of giving anything like adequate laboratory instruction to its pupils, to say nothing of facilities for experimental investigation, all the four great schools that we have mentioned are now abundantly supplied in both respects. It is true that, as regards each of the institutions, an endowment fund is still needed to prevent the cost of maintaining the laboratory from seriously impairing the resources of the college. There is reason to expect, however, that this need will not long go unprovided for; indeed, we learn that, in the case of the Loomis Laboratory, the anonymous founder has practically promised such further funds as may be necessary for the purpose. We are convinced that by carrying out this intention he will contribute immeasurably to the advance of medical knowledge in this community, and not here alone, but in every part of the continent whence students come to New York to pursue the study of medicine. Such an advance carries with it not only a gain in the alleviation of physical suffering, the avoidance of preventable sorrow, and the prolongation of the average expectation of life by broadening the field of application of sound hygiene and therapeutics, but also immense advantages to commerce by multiplying and simplifying our means of eluding epidemic visitations of disease. Not even gifts to the hospitals are so far-reaching in their usefulness; to deepen a single channel of beneficence is indeed commendable, but to give fresh vigor to the springs that pour forth the current is to go to the bottom of things. This is what is in some measure accomplished with every increase of the teaching and investigating capacities in medicine.

As is briefly mentioned elsewhere in this issue, the Loomis Laboratory was opened for the inspection of the profession last Monday evening, and many of its members availed themselves of the opportunity to examine the newest of the four institutions to which we have referred. Their general impression was that the building, which is said to have cost somewhat over $100,000, was suitably situated, adjoining the other buildings of the college and communicating with them; and that it had an air of solidity and good workmanship in its construction, and gave every evidence of its adaptation to its proper uses. It is described as being thirty-five feet wide, ninety feet long, and five stories high. The floors are of waterproof cement throughout, the wood-work is of cherry, and the walls are in soapstone finish of a pleasing tint. The first floor is devoted to the laboratory of materia medica and to that of physics. The latter communicates with the lower lecture-room of the main college building, and is well supplied with apparatus. On the second floor are the chemical and toxicological laboratories, including a large general room with tables properly provided with gas-jets, water-cocks, and ventilating hoods, capable of accommodating sixty students; a balance room; a special laboratory for investigation in cases of poisoning; and a laboratory of research containing the newest and most useful appliances. The front half of the third floor is devoted to the physiological laboratory communicating with the amphitheatre of the main college building, in which the physiological lectures and demonstrations are given. This laboratory is well adapted to its purpose, but it was to be noticed that the necessary apparatus was not so complete as it ought to be. This is owing, we are informed, to the fact that the college has sustained the loss of a portion of its outfit in this department—a loss that we trust will soon be made good. The southern half of the same floor is occupied by the laboratory of histology, with accommodations for thirty students, including a microscope for each one, together with all other necessary appliances and suitable histological material. The fourth floor is devoted to pathology, one half of it being arranged for undergraduates and the other for advanced workers. On the fifth floor are the laboratory of bacteriology, a pathological museum, apartments for microphotography, and several separate rooms for special investigations. It is gratifying to note in connection with the several departments of the laboratory that the preparations have not been governed simply by the purpose of affording improved means of teaching undergraduates, but have corresponded to an evident and most praiseworthy intention of providing proper facilities for advanced investigators. On this feature especially and on the general excellence of the building, we most heartily congratulate the faculty of the college.

MINOR PARAGRAPHS.

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

A NEW quarterly journal, the "American Anthropologist," forms the continuation of the society's "Transactions." The change is most commendable, for the new journal ought to stimulate increased interest among us in a study that has many bearings upon medicine. The first number, for January, 1888, is a handsome octavo of ninety-six pages, containing four elaborate articles, among which is one of particular interest to anatomists, "Anthropological Notes on the Human Hand," by Dr. Frank Baker.

THE PART PLAYED BY THE BILE IN DIGESTION.

THE question of the part played by the bile in digestion, to say nothing of the question of whether that secretion has anything to do directly with the digestive process, is one that has never been satisfactorily cleared up. According to the "Lancet's" Paris correspondent, M. Dastre lately read a paper on the subject before the Academy of Sciences, founding what he said largely on observations made with the aid of cholecysto-intestinal fistulæ. He concluded that, while such observations taught that the bile alone was powerless to effect the digestion and complete absorption of fats, experience taught that the pancreatic juice alone was equally powerless. Their mixture was necessary; the bile, as well as the pancreatic juice, played a part in the digestion of fatty substances, the former appearing to be more particularly charged with their absorption, and the latter with their division.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 28, 1888:

DISEASES.	Week ending Feb. 21.		Week ending Feb. 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	8	5	7	3
Scarlet fever	160	27	155	28
Cerebro-spinal meningitis	4	4	7	4
Measles	55	10	62	2
Diphtheria	135	34	111	43
Small-pox	2	1	3	0

The Health of New York City.—The following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department during the four weeks ending Tuesday, February 28th: Typhoid fever, 38 cases and 11 deaths; scarlet fever, 638 cases and 102 deaths; cerebro-spinal meningitis, 14 cases and 11 deaths; measles, 229 cases and 29 deaths; diphtheria, 625 cases and 169 deaths; small-pox, 23 cases and 2 deaths.

The late Professor Flint.—The tablet erected to the memory of the late Austin Flint, M. D., LL. D., by the Alumni Association of the Bellevue Hospital Medical College, will be formally unveiled at the Carnegie Laboratory, No. 328 East Twenty-sixth Street, on Saturday evening, the 10th inst., at 8.30 o'clock. The presentation address will be delivered by Dr. Leroy M. Yale. The profession in general is invited to be present.

The Boston City Hospital.—A new wing, containing wards for the treatment of contagious diseases, has been completed at an expense of about $60,000. Its sanitary and other necessary conditions for this class of cases are said to be as nearly perfect as can be devised.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending February 25, 1888:*

WILLIAMS, L. L., Passed Assistant Surgeon. Promoted, and appointed Passed Assistant Surgeon from February 10, 1888. February 23, 1888.

COBB, J. O., Assistant Surgeon. Appointed an Assistant Surgeon, February 21, 1888. Assigned to duty at Marine Hospital, Chicago, Ill. February 25, 1888.

STONER, J. B., Assistant Surgeon. Appointed an Assistant Surgeon, February 21, 1888. Assigned to duty at Marine Hospital, New York, N. Y. February 23, 1888.

CONDICT, A. W., Assistant Surgeon. Appointed an Assistant Surgeon, February 21, 1888. Assigned to duty at Marine Hospital, Chicago, Ill. February 23, 1888.

Society Meetings for the Coming Week:

MONDAY, *March 5th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association (annual); Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *March 6th:* New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg Medical Association; Hudson, N. J., County Medical Society (Jersey City); Essex, Mass., South District Medical Society (Salem); Androscoggin, Me., County Medical Association (Lewiston).

WEDNESDAY, *March 7th:* Harlem Medical Association of the City of New York; Society of the Alumni of Bellevue Hospital; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

THURSDAY, *March 8th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *March 9th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

SATURDAY, *March 10th:* Obstetrical Society of Boston (private).

Letters to the Editor.

PREMATURE RUPTURE OF THE AMNION.

FORT WORTH, TEXAS, *February 10, 1888.*

To the Editor of the New York Medical Journal:

SIR: In answer to Dr. A. L. Browne's inquiry about "Premature Rupture of the Amnion," I saw a case of this kind recently, in a well-nourished, active, intelligent lady, the mother of several children. Great quantities of the amniotic fluid had been discharged, the abdomen was in a flaccid, reduced condition, the os was spongy, and there was much vernix caseosa in it and in the vagina. There was pain in the head, with uterine pains. I gave her three eighths of a grain of morphine subcutaneously, and ordered thirty-five drops of tincture of hamamelis and five grains of gallic acid, in an ounce of water, every hour, enjoining rest. I fully expected premature delivery, but she grew quiet and the flow ceased under the use of a dessertspoonful every hour of a mixture of half an ounce of tincture of hamamelis, two drachms each of aromatic sulphuric acid and gallic acid, and three ounces and a half of distilled water. At about the two hundred and seventieth day I was called and, after a tedious labor, delivered her of an ill-nourished child with double talipes, which lived only an hour. I believe the child's feeble condition was from want of the nutrition usually afforded by the liquor amnii, and, if I had another such case, should use the same treatment, with antipyrine, that Dr. Browne used, as I have found it to greatly quiet uterine pains.

A. P. Brown.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of February 8, 1888.

The President, Dr. C. L. Dana, in the Chair.

Rectangular Prisms in a Single Frame.—Dr. J. B. Emerson presented a pile of rectangular prisms consisting of Nos. 2, 4, 6, 8, 10, 12, 14, and 16, which were fixed, and two additional prisms, Nos. 1 and 16, which were movable. By subtracting, Nos. 3, 5, 7, etc., were obtained, and by adding, Nos. 18, 20, 22, etc. The apparatus was used in the same way as ordinary prisms, the advantage alleged being increased facility in rapidly changing one prism for another. The muscles could be tested in a quarter of the usual time.

Mr. Birdsall asked what the price of the instrument was.

Dr. Emerson replied that Meyrowitz Brothers furnished it for $16. Dr. Norris's rectangular prisms cost $18; the ordinary set, $12.

The President asked whether the instrument would indicate fractions of a degree, referring to the fact that Dr. Stevens reported errors in fractions.

Dr. Emerson replied that he had never tried to test fractions, but that the subtraction of a ½ or ¼ prism would enable this to be done.

Dr. Leszynsky considered the arrangement very ingenious. The principle of subtraction and addition was that of the ophthalmoscope. But he thought that testing with prisms was unreliable. By means of the prisms it was possible to create the appearance of a condition which did not exist.

Golgi's Method of Staining.—Dr. Van Giesen presented specimens stained by Golgi's method. Blocks, 1 to 2 c. c. in dimensions, were subjected to the action of a two-per-cent. solution of bichromate of potassium or Müller's fluid. The time required for hardening varied with the temperature. A constant temperature of from 20° to 25° C. (68° to 77° F.) was preferred. In the summer, hardening was completed in from fifteen to fifty days. In winter from five to fifteen weeks was required. In changing the bichromate solution its concentration was increased up to five per cent. After hardening, the specimen was placed in a solution of nitrate of silver, 0·75 per cent. on an average. Where the hardening was incomplete, a one-per-cent. solution might be required. Where it was more complete, a 0·50-per-cent. solution might be sufficient. A precipitate of chromate of silver required that this solution should be frequently changed. The specimen was kept in this solution for from twenty-four to thirty hours. It was then washed in water, imbedded, washed in alcohol, and cleared with creasote and oil of turpentine. The same result could be obtained by immersion in a corrosive-sublimate solution of the strength of one per cent., but months were required by this method. The speaker thought it also less certain than the one described. Both methods had been modified by Pall, of Vienna. The modification required the immersion of the silver or sublimate sections in a one-per-cent. solution of sodium sulphide, which produced a more complete precipitation in the finer processes.

The object of the method was the staining of ganglion cells and processes, the matrix being left clear. There was sometimes a tendency for the silver to precipitate in the circumcellular spaces and in the channels around the processes so as to make them appear thicker than they ought to be. It was, however, the only method which had stained the ganglion cell. The speaker had been successful with specimens taken from the cortex. In those from the cerebellum and the spinal cord he had been less successful. It was essential that the specimen should not over-harden. It was necessary every day or two to sacrifice a piece and try it in the silver solution to determine whether the hardening was sufficient.

The President also presented specimens stained by Golgi's method. He had not thus far been so successful as Dr. Van Giesen, but in a few specimens he had got staining which showed one interesting peculiarity of the method—viz., that at times it stained cells of one class; at other times, those of another. In his sections the connective-tissue cells only had been stained, but these were shown in a striking manner. Obersteiner had stated that by the sublimate method only about one tenth of the cells were stained. The speaker thought that Golgi's method was a truly epoch-making one, comparable to that of Weigert for the nerve cells; but naturally great care would be required in drawing conclusions from what was seen. He presented Marchi's monograph on the structure of the optic thalamus and corpus striatum, in which it was shown that the cells of the former ganglion were of the motor type, and those of the latter of the sensory.

Dr. Sachs asked whether any facts had been demonstrated by Golgi's method which had not been shown by others.

Dr. Van Giesen replied that there was no other method which would stain the ganglion cell. Golgi's method had shown the axis-cylinder as a branch of the nerve cell. It had shown also that the protoplasmic processes did not inosculate.

Dr. Birdsall dissented from this inference. We had no means of knowing that even by this method the whole of the process was stained. By Golgi's method we could trace the process farther than by the other methods, but we could not say that finer subdivisions did not exist which the precipitate failed to indicate.

Neurasthenia and Lithæmia.—Dr. A. D. Rockwell read a paper on this subject. (See page 180.)

Dr. Birdsall remarked that the term neurasthenia had been used to cover a variety of nervous disorders not due to organic disease. The term lithæmia also was commonly used in a vague and incorrect manner. He thought it impossible to make a division between the clinical features of the two conditions. There were many intermediate cases which would upset any classification. All were probably but parts of a vast group of nerve disturbances based upon faulty conditions of nutrition. Absence and rest had a direct effect upon digestion. The results of treatment presented no ground for the conclusions named. Heredity was a marked factor.

Dr. Sachs stated that for a long time he had been skeptical as to a true set of lithæmic symptoms, but that he had found them in private practice, and had followed up a number of cases.

He agreed with the previous speaker in regarding neurasthenia as but a nervous disturbance of which lithæmia might be an ætiological factor. Lithæmia had been, in his experience, almost limited to women of the wealthy class leading an inactive life. The nervous symptoms were proportioned to the amount of uric acid in the urine. With increased exercise or prolonged massage the uric acid disappeared and the patient improved. Referring to the question of heredity, he considered cases with hereditary lithæmic tendencies as gouty; and when they were neurasthenic he classed them as cases of neurasthenia upon a gouty basis.

In regard to the treatment, he agreed with the reader of the paper. For lithæmia he used cholagogue cathartics, physical exercise, and massage.

Dr. Birdsall explained that he had referred to the inheritance of neurasthenia, not of the lithæmic symptoms.

Dr. Leszynsky had met with cases which merited the name of lithæmic neurasthenia. He recalled a case in which nervous symptoms had alternated with gouty manifestations. He had watched this case for two months, during which time no diagnosis but that of neurasthenia could be made. At the end of that period a true gouty attack had developed. While the gout lasted the nervous symptoms were absent; but these returned when the gout disappeared. But little satisfaction was obtained from examining the urine in these cases; it was impossible to separate two classes by its indications. Concentration was common in neurasthenia and in other states. The speaker added that the late Dr. McBride had been accustomed to say that all neurasthenia was caused either by lithæmia or by muscular anomalies.

Dr. Emerson had seen neurasthenia cured by the correction of errors of refraction and muscular anomalies.

The President favored the classification of neurasthenic symptoms into further clinical groups, the subdivisions to be based upon the ætiology, the symptomatology, and the chief seat of the disorder. Ætiologically, there were the hereditary and the acquired forms. Among the acquired were to be placed the lithæmic, etc. Symptomatologically, there were the irritative and the depressed forms. Anatomically, there were the cerebral, gastric, sexual, and others. In classification, here as in insanity the various factors above indicated would for the present have to be used.

Dr. Rockwell explained that he had not represented neurasthenia and lithæmia as separate types of disease. He had not said that there was a distinct dividing-line between them. He admitted the lithæmic origin of neurasthenia in some cases. There was, however, a distinct difference in the behavior of certain cases toward food. In the purely nervous case an abundance of albuminous food was indicated, while in lithæmia the quantity of such food was to be curtailed. Notwithstanding the existence of intermediate cases, there were others which were distinct and required different treatment.

The President asked whether Dr. Rockwell limited albuminous food in lithæmia.

Dr. Rockwell replied that he did. He had indeed cured himself of excessive irritability accompanied by lithæmia by dispensing with meat and living mainly on a farinaceous diet.

The President referred to the fact that Dr. Draper had, in the Practitioners' Society, about two years ago, recommended a purely nitrogenous diet in these cases. He had used the same in his own practice, but latterly with some doubt.

Dr. Birdsall stated that he too had followed Dr. Draper's rule. In defective digestion sugars and starches were many times at the bottom of the trouble. Fats, too, were often the offending agent. It was not even known that uric acid was the poison in these cases.

Dr. Sachs preferred to employ non-nitrogenous rather than albuminous food.

The President was himself skeptical as to the value of albuminous food in lithæmia. It must be remembered, however, that there were cases in which apparently only nitrogenous food could be digested.

ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

(Continued from page 219.)

The Use of the Vaginal Tampon in the Treatment of certain Effects following Pelvic Inflammations.—In the further discussion on Dr. Thomas Addis Emmet's paper with this title (see page 169), Dr. Charles Carroll Lee, of New York, said that he had not heard the reading of Dr. Emmet's paper. From the beginning of his professional career in this branch of medicine he had followed the views of Dr. Emmet so far as he had understood them, and he should never cease to be grateful for those teachings; but as physicians grew older it seemed quite natural that they should form opinions of their own, right or wrong, which differed a little from those of their teachers. So, if his impression of the tenor of Dr. Emmet's paper was correct—that all cases of pelvic or circumuterine adhesions were amenable to treatment by tamponing the vagina—he should have to respectfully dissent from that conclusion. Moderate and recent pelvic adhesions, which were not very dense, not only might be benefited, but, in his judgment, were curable, so far as the patient's sufferings were concerned, by tamponing the vagina. But there was a small minority of cases, sufficiently severe to cause the patient much pain, in which the most persistent and intelligent tamponing failed to give any relief. In this class of cases one could feel, not only through the rectum but also through the vagina, dense pelvic adhesions, true bands behind the uterus which connected that organ with the circumuterine tissues. As an example, he related the case of a lady who was treated by him, aided by Dr. Hanks and Dr. Swasey, by persistent, thorough tamponing of the vagina, continued for seven months, at first in the knee-chest posture. At the end of the seven months the patient was as uncomfortable as at the beginning, although her trouble was due solely to pelvic adhesions. At the end of that period he etherized her, introduced the greater portion of the hand into the rectum, and attempted to break up the adhesions, but did not succeed, and the patient remained as uncomfortable as before. Finally, he performed laparotomy, and tore up the adhesive bands between the uterus, ovaries, and pelvic tissues. To guard against the formation of new adhesions, the uterus was supported on a flat drainage-tube. No new adhesions formed, and the patient got well. He related this case only as an example of a minority class. He had always used Dr. Emmet's method of tamponing the vagina with one modification—viz., he used denser material than ordinary cotton batting. To cotton used in the ordinary way he had found the same objections which Dr. Emmet had found to cotton with glycerin. He had come to use iodoformized gauze wrung out of water, from which he got better prolonged pressure of an elastic nature, which the patient could bear, than from any other material. He had learned through Dr. Emmet of the value of a pessary described by him and made in London, and had found no other pessary, certainly none of the ordinary retroversion pessaries, which gave anything like as much comfort. But the patient had to be taught how to use it, and to introduce it every morning. The vaginal secretions caused the pessary to undergo rapid decomposition, and to induce irritation unless it was removed every night.

He believed that the large majority of cases of pelvic adhesions, if recent and uncomplicated, especially uncomplicated with the results of peritonitis or perimetritis, were remediable to such a degree by tamponing that it was our duty in such cases always to tampon. But there was a minority of cases in which careful observation would convince the judicious surgeon of the necessity of opening the abdomen, under antiseptic precautions, to break up the adhesive bands in order to give the patient relief.

Dr. Emmet explained that the breaking up of adhesions, as mentioned in his paper, was only incidental; the principal object of the paper was to present a means of destroying or getting rid of the large venous diverticula which usually formed in the folds of the broad ligament. It was necessary to overcome that condition, and, if adhesions were broken up during the treatment by pressure, it was only incidental.

Dr. James B. Hunter, of New York, had expected, when asked to participate in the discussion, to hear different views expressed by Dr. Emmet, to which he should have to take exception, but since hearing the paper he had become a positive pole, not a negative one. He entirely agreed with the author. The treatment corresponded entirely with that which he had employed for years.

The President (Dr. William H. Baker, of Boston) explained that the subject of the paper and that for discussion had been broadened, and that those invited to take part in the discussion would not now be expected to take affirmative and negative sides, but would discuss the subject as a whole.

Dr. Hunter thought the tampon served two or three different purposes. First, its action was mechanical, therefore we should be careful in the selection of material. Absorbent cotton evidently was not suitable, because it soon became hard, like wood. He had come to use chiefly fine non-absorbent jeweler's cotton, or prepared wool, which when well prepared was not absorbent and still was fairly free from grease. It was more elastic than cotton and retained its elastic quality longer. The medicament applied with the cotton was not of much importance except as it tended to keep it aseptic. After trying different agents he had come to regard powdered borax as the best. He did not use vaseline nor glycerin. He agreed with Dr. Emmet regarding the pathology, and as to the effect of supporting the uterus at its proper height in the pelvis. He thought the same explanation which he had given of the benefit derived from the tampon would also apply to the benefit derived from massage, which was now so commonly used in Germany. He used hot-water injections daily, sometimes twice a day, continuing them through menstruation, as they did more than anything else to relieve dysmenorrhœa. The injections were made by means of a thin rubber bag with two outlets, which permitted the constant flow of water, with little labor on the part of the patient using it.

Dr. Bache McE. Emmet, of New York, said that the cases cited by those who had discussed the subject reminded him of some similar ones. He referred to one in which there was excessive fullness of the blood-vessels after prolonged prolapsus of the vaginal walls, accompanied by excessive sensitiveness of all the parts. The parts could not of themselves resume their normal situation and thus relieve the engorged condition of the blood-vessels. Regarding the application of the tampon in cases of chronic inflammation which called for it, he did not believe it was essential during menstruation, nor that it was necessary to substitute a pessary. While using cotton pledgets to overcome excessive fullness of the vessels, he had at the same time observed benefit from the use of fluid extract of hamamelis. As it was useful in the treatment of the distended state of the veins in hæmorrhoids, so also had he found it serviceable in the distension of the veins in the class of cases under discussion. Its application was more direct than when it was used for varicose veins of the lower extremities, and it would seem that the benefit derived should be greater.

Dr. Howard Kelly, of Philadelphia, presented a small tenaculum convenient for the introduction of the tampon used in the class of cases under discussion.

Dr. Moseley had been using the tampon for a long time, but never so intelligently, nor with such great satisfaction, as since he had received a letter from Dr. Emmet concerning a patient of his whom Dr. Emmet had kindly examined. The question of circumuterine adhesions had been raised, and he expressed the opinion that something could be done in many such cases by the judicious and persistent use of the tampon. In these cases there was a tendency of the parts, on replacement, to immediately return to their abnormal position, and he had found by clinical experience that the use of the tampon and of counter-irritation would place the patient in a condition in which she could wear a pessary with comfort. In some cases which he had in mind the pessary had now been worn some months, and he thought it could soon be discarded. Dr. Hunter had spoken of a method, which he had also adopted—that of dusting the posterior fornix with boric acid, and also dusting the upper portion of the tampon with the same material. He began tamponing with the patient in the knee-chest position. In spite of Dr. Coe's opinion to the contrary, he had found that the tampon would retain its position in many cases. He did not allow the parts to return to their former position, and to prevent their doing so he removed the tampon in the knee-chest posture, carefully disinfected the vagina with bichloride solution, and replaced the tampon. He had had the same trouble that others had mentioned regarding the best material to use, and had finally settled upon carded cotton, which could be obtained at cotton mills. The strips were of the width of four fingers, of indefinite length; the cotton was fine and the fibers were long. Regarding the use of hot water during menstruation, he thought there was one form of dysmenorrhœa in which this plan could be adopted with good results, namely, that in which the pelvic vessels were markedly congested while the flow was slight.

Dr. A. Palmer Dudley, of New York, spoke upon the subject of Dr. Emmet's paper and upon that of his own (to be published hereafter, together with the report of what he said in the discussion).

Dr. T. A. Emmet added that it was twenty years or more since he had first recognized the part taken by dilated veins in the causation of certain symptoms. Perhaps he had been the first person to recognize it. His object now in writing the paper had been to suggest a method by which those dilated veins could be obliterated. He had not heard Dr. Dudley's paper, nor had he known that he was to write upon this subject, yet it would seem they had arrived at the same point, although they might have traveled somewhat different paths.

(To be continued.)

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of February 2, 1888.

(Concluded from page 217.)

A Multilocular Dermoid Cyst.—Dr. William Goodell showed two dermoid cysts which he had on that day removed from a girl sixteen years old. The largest one contained daughter cysts, or at least round bodies resembling them; yet he had always before found that all dermoid cysts which he had removed were single-chambered and did not contain smaller cysts.

A Gravid Uterus.—Dr. Hamill exhibited a uterus removed from a woman in the last month of pregnancy, about twenty-four hours after death. The outer surface was studded in many places with syphilitic nodes. The woman had contracted syphilis early in her married life, and manifested other marked symptoms of the disease. There was also a small cyst of the broad ligament. The specimen presented quite decidedly the contraction ring, or ring of Bandl. The speaker gave both designations advisedly, inasmuch as it was not definitely determined whether this ring represented the internal os, as Bandl maintained, or whether it marked the boundary between the upper and lower uterine segments, as Schroeder believed. According to the investigations of MacDonald, Müller, Sänger, and Lusk, this condition did not always exist. In three autopsies made by Lusk he had failed to find any trace of Bandl's ring. Schroeder, in a frozen specimen, had found this ring very distinct, but maintained that it was the dividing-line between the upper and lower uterine segments. Bandl held the contraction ring of Schroeder to be the true internal os, and consequently one would expect to find below this ring cervical mucous membrane, whereas the portion between Bandl's and Müller's rings was covered by decidua. Bandl explained this by his three hypotheses: 1. The deciduous membrane was crowded down into the cervix by the weight of the presenting part. 2. In primiparæ the advancing head stripped off the mucous membrane, which was replaced by decidua. 3. The cervical mucous membrane was transformed into decidual membrane during pregnancy. Another interesting feature that the specimen showed was that condition pointed out by Leopold and Lusk as seen in their Cæsarean sections—viz., the delicate filamentous bands running from the chorion to the deciduæ, which were the atrophied villi of the chorion. The attachment of the placenta was to the posterior wall of the uterus.

Dr. Hirst had seen the frozen section made by Schroeder in 1884, and it was most interesting, showing distinctly the so-called ring of Bandl. The speaker did not believe in any one of Bandl's three hypotheses to account for decidual membrane in a place where, according to Bandl's theory, cervical mucous membrane should be found. The extraordinary diversity in the explanations advanced by Bandl showed plainly enough the insufficient ground upon which his theory rested.

Dr. M. Price firmly believed in hunting for anatomical facts upon the living subject. He had looked for Bandl's ring and had never been able to find that it existed. He was fond of turning in cases of malpresentation, and had had his hand in the uterus many times. He had had it so compressed that it was useless for some moments, and the compression had always been uniform and from all directions. He had yet to find any constriction in the region of the so-called Bandl's ring alone. He had in several cases observed hour-glass contractions, but this was due to continued pressure on one side of the uterus and consequent loss of contractility of that portion. He did not believe that hour-glass contraction ever occurred in uncomplicated labor.

Dr. Parish remarked that in a Cæsarean section performed by Dr. Foster, of Maine, the operator had observed a circular contraction. This went to prove that such a thing could occur. In two cases of Cæsarean section performed by himself no such contraction had existed, and likewise there was no such circular contraction in a third case of Cæsarean operation performed by Dr. Allis and himself.

Dr. Githens stated that in discussions before the society in October, 1879, in December, 1879, and in October, 1880, upon the subject of "Hour-glass Contractions of the Uterus," Dr. Albert H. Smith, Dr. R. T. Curtin, and Dr. W. H. Parish had reported instances of prolonged and forcible contraction of a ring of muscular fiber in the uterus, above the internal os, the lower and upper segments of the uterus remaining flaccid. In Dr. Curtin's case Cæsarean section was being performed. The uterus had not been emptied of its contents, and the ring of contraction was seen as well as felt. In the other cases a placenta or a twin fœtus was retained in the upper segment of the uterus. Might not this ring of muscular fibers, so contracting, be identical with that described by Bandl? In the case reported by A. H. Smith the condition lasted for two hours and was relieved by hot-water intra-uterine injection. Dr. Smith had reported the point of contraction as being at the internal os, but, as he was opposed to the idea of there being any such thing as a contracting ring at a higher point, we must make some allowance and consider that it occupied a position near that described by Bandl as the location of the contraction band.

Dr. R. Stewart had seen a case in which, after the child was removed, the patient began to show signs of internal hæmorrhage. The uterus was examined and found to be much distended. An attempt was made to pass the hand in, but it was done only with difficulty, as there was a powerful contraction in the lower segment. The body was found distended, very flaccid, and filled with blood. He thought that this case proved that a contraction could occur in the lower segment.

Dr. Hirst quite agreed with Dr. Price in thinking that these cases always arose from pressure. He had seen good examples of Schroeder's contraction ring in which the ring marked the dividing line between the upper and lower segments of the uterus, and was not at all due, as might be inferred from some of the preceding remarks, to contraction of the circular muscular fibers, but was merely the sharply defined boundary between the upper, thicker, and more muscular portion of the uterus and the lower, thinner, more fibrous portion above the true internal os.

Dr. Hamill observed that the patient had formerly suffered from Graves's disease, but had no active symptoms at the time of her death. She had died of heart failure.

A Four Weeks' Ovum was shown by Dr. Hamill, both on account of its rarity and to elicit the members' views on the after-treatment of abortion. The specimen was entire, with the deciduæ. As a rule, the decidua vera was not thrown off entire with the ovum. A German author was quoted as having said, from a personal experience with more than one hundred and fifty cases of abortion in the service of the Charité, of Berlin, that the retention of portions of the decidua vera was not the exception, but the rule; and Tarnier as saying that ordinarily the uterine decidua remained adherent to the uterus. Whether it was safer to leave this in the uterus and allow nature to throw it off, or to remove it at once, was the particular point that the speaker would like to hear discussed. For his own part, he felt sure that it should be removed immediately. As to the manner of its removal he would say nothing.

Dr. Hirst said that, when the decidua vera was retained, as was the rule in early abortions, one of two things happened: the mass either putrefied and thus became a source of septic infection, or it became greatly thickened and remained as a foreign body, exciting frequent hæmorrhage or constant leucorrhœa. He always cleaned away any *débris* left in the uterus after abortion.

Dr. Goodell agreed fully with Dr. Hirst as to the propriety of removing the retained fragments of the placenta or the membranes; but he had a word to say about the manner of their removal. He deemed the much-vaunted curette, whether sharp or blunt, a very inferior instrument, especially whenever the fragments had been retained for several weeks. Not only did the curette bruise and injure the unimplicated portion of the womb, but it tended to glide over the fragment, merely scraping its surface. Sometimes, indeed, it would hook up one end of the fragment, and, after causing a great and needless flow of blood, would slip off. So often had he been disappointed with it—nay, even alarmed by the great loss of blood—that he now used either a small fenestrated polypus forceps, when the os was dilated enough to admit it, or a slender-handled catch-forceps. With these instruments the fragment was invariably seized and removed by a twisting movement, while the womb itself sustained no injury whatever. It was in fact safer to use these instruments in the womb than to catch a stone in the bladder with the lithotrite.

Dr. Parish had seen a number of mistakes made with the curette. He had been called to a case and found a woman who had been bleeding for four or five months. Her former attendant had curetted and pronounced the womb empty. The speaker and his colleague dilated the cervix and removed a body as large as his two fingers. In another case the uterus was curetted by the attending physician and pronounced empty. Within twenty-four hours the patient aborted. These cases well illustrated how one might be deceived as to whether the uterus was empty when relying on the curette. In his own practice, after three months, if there was retention he introduced his finger and extracted everything. He thought, with Dr. Goodell, that something more reliable than the curette must be used to enable one to say that the uterus was empty after abortions, in doubtful cases.

Dr. Longaker did not interfere before the third month at all, unless the patient had decided signs of retention, such as hæmorrhage, patulous os, etc.; otherwise it was, as a rule, safe to conclude that everything had come away. During the third, fourth, and fifth months retention was very frequent. He thought it surprising what a small portion of placenta would give serious trouble; even small shreds would keep up a very serious hæmorrhage. He always removed anything which had been retained, using the finger, and very frequently anæsthetizing the patient.

Dr. R. Stewart asked the members of the society in what proportion of cases they had to interfere. He had never used the curette for this purpose, and had never failed to remove placental and decidual remnants with forceps of proper size. The hæmorrhage generally ceased in from twelve to fifteen hours; if it did not, he investigated and usually found some *débris* left behind. But he was convinced that, if there had been no improper interference at the time of the abortion, such cases were exceedingly rare. He agreed with Dr. Longaker as to the amount of trouble kept up by small pieces of membrane, etc.

Fœtal Rhachitis.—Dr. Hamill also presented a fœtus showing rhachitis. The specimen presented a number of anomalies; probably the rarest one was the condition of intra-uterine rhachitis. The marked rhachitic condition of both femora was to be noted. Fifty-three cases had been collected by Schorlau and Graefe. This condition of the bones in rhachitis might be simulated by the arrest of bony development in cases of fœtal cretinism occasionally met with in Europe. The absence of three fingers and the corresponding metacarpal bones would, following the classification of Geoffroy-St.-Hilaire, place this among the hemiteratic class and in the subdivision of that class known as anomalies by numerical diminution. This form of monstrosity was not met with very frequently. The absence of the fibulæ rendered the specimen still rarer.

Intestinal Obstruction.—Dr. J. Price exhibited a piece of large intestine which had been removed that day by Dr. Charles B. Penrose. The patient, a woman, had not had a movement of the bowels for twenty-eight days, and there was enormous distension. The constriction was easily found, on the right side of the uterus and posteriorly. The intestine was punctured, and a gallon or more of fæces removed. The gut was then resected, a piece twelve inches long being removed. The two ends of the gut were then united in half their circumference, and the other half was stitched to the abdominal opening, making an artificial anus. Dr. Agnew had seen the patient, and had recommended immediate operation. The woman was a patient of Dr. Bernardy's. She was now doing well. The speaker believed that Mr. Tait had first advised the preliminary puncture to relieve the distension in conditions that could not be dealt with by resection. He had some letters from Dr. McMurtry, of Danville, Ky., who had been called to see a physician, twenty-six years old. On opening the abdomen, he found two perforating ulcers of the cæcum with local peritonitis. He had trimmed the edges of the ulcers, and closed them with Lembert sutures; irrigation and drainage were used. On the fourth day the pulse was 92, the temperature was 99° F., and the patient had a complete evacuation of the bowels.

A Fibroid Tumor of the Uterus with Tubal and Ovarian Disease.—Dr. Price also exhibited a fibroid tumor which had been bound down in the pelvis. The right Fallopian tube contained blood, and the ovary was bound down by adhesions. The tube and ovary of that side were tied off, but the left tube and ovary were so imbedded in a mass of large venous sinuses that it would have been dangerous to interfere with the ovary. The tube was removed. A clamp was passed around the tumor, which had been lifted out of the abdomen, and the mass was removed. The clamp came off on the seventeenth day, the temperature was never above 100°, nor the pulse above 65. In connection with this case, the speaker remarked that tubal and ovarian trouble complicating fibroids was very common. Dr. Keith had found the tubes diseased in about all his first thirty-eight cases of hysterectomy. In nine cases he had attempted to remove them, but had failed, and finished by hysterectomy. It was surprising to find Dr. Keith condemning the operation, and the speaker thought that his statistics explained the matter. His mortality in private practice was less than four per cent. and in public practice more than fifteen per cent.

Dr. Price further exhibited the drainage-tubes used by Dr. Bantock, of London, as well as a tube for continuous irrigation which Dr. C. B. Penrose had given him. He also showed Tait's modification of Kœberle's wire clamp, and the delta metal wires now used by Dr. Bantock.

Dr. Hirst exhibited the incubator and the apparatus for *gavage* in use at the Maternity Hospital.

An Instrument for Measuring the Obliquity of the Pelvis, a simplification of Verrier's instrument, a picture of which could be seen in Witkowski's "History of Obstetrics," was shown by Dr. Hirst, who related the history of a difficult breech extraction, the difficulty being solely owing to an abnormal inclination of the pelvis. The plane of the superior strait was almost vertical as the woman stood erect.

Pneumonia of Prenatal Origin.—Dr. Hirst showed also a specimen from a case which contrasted well with the case of prenatal pneumonia exhibited at a former meeting. The pneumonia in this case was caused by the inspiration of blood, liquor amnii, and mucus during labor, which was a very tedious one. The pneumonic consolidation could be found in spots of about the size of a chestnut throughout both lungs. The child had a temperature of 103° directly after birth, and died on the third day.

A Double Monstrosity was also shown by Dr. Hirst. Two immature fœtuses, of about the third month, were intimately joined by a complete fusion of the anterior abdominal walls. There appeared to be no bony junction whatever. Both fœtuses were male. There was a common umbilical cord given off from a flap of skin stretched between the most dependent portion of the abdomens.

Inflammatory Tubal Disease.—Dr. B. F. Baer presented specimens of inflammatory tubal trouble. The first case was that of a woman, twenty-four years old, who had had severe hæmorrhages for two years past, and was reduced to an almost bloodless condition. She was treated for three months in a hospital by the usual methods, with no relief. The operation proved the diagnosis. Both ovaries were removed. The fimbriated extremities of the tubes were lost in the ovaries. She made a good recovery, and he thought the cure permanent. The second case was that of a woman twenty-nine years old. She was confined to bed with a pelvic peritonitis and a bad hæmorrhage. She had had recurrent attacks of this kind, and had almost lost her life thereby. A tampon controlled the hæmorrhage for a time, but when it was removed the bleeding returned. During the operation he was compelled to catch the ovaries with a small forceps in order to tear them away from their adhesions. The left ovary contained a small fibroid, which had been the seat of much pain between the menstrual periods. There was no pus in the tubes. He had never seen pus in the tubes in any of his cases. They were simply thickened and adherent. He did not think that pus was ever contained primarily in the tubes.

Dr. Deaver then showed some tubes that had contained pus. In the first one, on rectal examination, a tumor could be felt, but he was uncertain whether it was in the rectal wall or in the abdominal cavity. By vaginal examination he discovered a prolapsed ovary. He found at the operation that the right ovary was displaced, and adherent to the pelvic floor. The left ovary was adherent to the rectum. The patient had been discharging purulent matter from the rectum. She was undoubtedly syphilitic, which, he thought, accounted for the discharge, which still kept up. She had been a sufferer for two years or more, and had been treated by several physicians for stricture of the rectum. After the passage of bougies, pus and blood would ooze from the rectum, and finally the bougies caused so much pain that they had to be dispensed with. The second case was that of a young woman. She had been seen by an eminent physician, and he had pronounced the trouble an old cellulitis which had not yet undergone resolution. She had recently had another attack, and the pain was decidedly that of suppuration. Vaginal examination revealed a mass which fluctuated very slightly. On opening the abdomen, the right ovary was found to contain a good-sized cyst; the tube contained pus, and there was, besides, a blood-cyst. On the left side there was a cyst of the broad ligament, together with an enlarged tube containing pus. Both cyst and tube were ruptured in the removal. Two drainage-tubes were inserted. The temperature reached 101°. The stitches were not yet out. The drainage-tubes were removed in fifty-two hours. They had been kept dry and clean with a cotton rope. There was no discharge after their removal. One point the speaker wished to make was, that pelvic surgery was very delicate work; there was great danger from the proximity of the great vessels and the ureters, as well as the bowels. There was great danger of tearing the bowels in separating adhesions.

Dr. Parish gave the history of a case in which there was evidence that pus had formed primarily in the Fallopian tube, although he thought that this was not usually the case. Commonly the infection began in the uterus and extended to the tube, which then had both ends sealed and thus formed a pus-sac. Abscess of the ovary, he thought, was usually secondary to suppuration in the tube.

Dr. J. Price said that the statement had been made at the last meeting that pelvic surgery in purulent cases was child's play in comparison to surgery of broad-ligament cysts. He would himself reverse that statement. In regard to Dr. Baer's not finding pus in the tubes, he would say that Dr. Gross had reported a case where a pint or more of pus was found in a tube. Pus did beyond doubt exist in the tubes. He had had a number of cases in which the pus had flowed out through the uterus while he was removing them. Dr. Deaver's cases were exceedingly interesting on account of the mixed character of the lesions, suppurating tubes and small ovarian and broad-ligament cysts co-existing. The cyst which had collapsed in the tapping in Dr. Parish's case he believed was one of the broad ligament, just such cases as Keith tapped and said never returned. Dr. Deaver's patient treated for stricture had had no stricture except that caused by pressure of the diseased appendages and inflammatory bands constricting the bowel. The cases Dr. Baer had reported were cases of caseous degeneration, and in such cases the tubes did not often contain pus. If Dr. Baer continued to do pelvic surgery he would soon come across some pure purulent cases, and would probably find them sufficiently charged with pure pus to deluge the peritoneal cavity.

Dr. Baer did not believe that pus existed in the tubes primarily, but that it always started in the pelvic connective tissue and had been formerly called pelvic abscess, which term seemed now to have died out. The tubes exhibited by Dr. Deaver did not now contain pus. He was still of the opinion that the surgery of broad-ligament cysts was much more difficult than the removal of purulent tubes.

Dr. Deaver said that the tubes which he had exhibited had most unmistakably contained laudable pus, but that it had been discharged in the handling. He did not see how pus in the broad ligament could get into the uterus without ulcerating through either the uterus or the tube. His was undoubtedly an abscess of the tube pure and simple. As to the comparative difficulty of the surgery of broad-ligament cysts and that of purulent tubes, he considered that of the tubes the most difficult. In the broad ligament cysts one had almost all the anatomical points defined, and there was, as a rule, no inflammatory complication. In dealing with the Fallopian tubes, on the other hand, owing to their displacement and the adhesions bringing them to the pelvic floor, or perhaps their adhesion to the ureters, the vagina, the hæmorrhoidal plexus of veins, the intestines, and the bladder, one might encounter one of the most difficult cases in surgery.

NEW YORK SURGICAL SOCIETY.

Meeting of February 8, 1888.

Dr. Charles K. Briddon in the Chair.

Result of Mikulicz's Osteoplastic Operation.—Dr. Charles McBurney presented a patient upon whom he had operated in March, 1887. The man had sustained a compound comminuted fracture of the os calcis, with extensive laceration of the tissues; he had been treated for a week before he came under the speaker's care, and the wound had already become infected. The os calcis and astragalus were removed and the cuboid and scaphoid and lower ends of the tibia and fibula were sawn off, the bones being then nailed together. Recovery was retarded by the formation of a bone abscess which it was necessary to scrape out. The patient complained at first of severe pain at the point of dorsal flexion of the toes, and wished to have his leg removed in consequence, but he was rapidly improving and could walk without difficulty. He was now wearing a high-laced boot having a sole that formed an inclined plane, and found it quite comfortable.

Dr. T. M. Markoe asked how much shortening there was.

Dr. McBurney said that the limb was really lengthened. It would have been better if he had removed about half an inch more from the bones of the leg.

The Treatment of Perityphlitic Abscess.—Dr. Henry B. Sands read a paper on this subject (see page 197). The patient was presented. The wound in the abdominal wall was not entirely healed, but there was no tendency to hernia.

Dr. R. Abbe asked the author if he had often observed œdema of the abdominal wall in connection with such cases as the present.

Dr. Sands replied that it was unique in his experience. He attributed it to the intense degree of the inflammatory process. If an abscess was near the surface one might expect to meet with changes in the abdominal wall; in general, as the site of the abscess was approached, the adjacent tissues would be found to be more affected.

The Chairman asked if there was any peculiarity in the shape of the appendix vermiformis which might account for the condition that was found. Was not the patient liable to have the same trouble again, and would not the possibility of such future trouble have been prevented by removing the appendix entirely?

Dr. Sands said that in such a severe case as the one reported he disliked to do any more than was absolutely necessary. The cæcum was much thickened, and the wound caused by excising the entire appendix might not have done so well as when the perforation was simply closed. For the same reason, when operating for strangulated hernia, he sometimes let the omentum within the sac entirely alone, simply dividing the constriction. He thought that there was but a slight probability of any recurrence taking place in this case, as the adjacent coils of intestine had probably become firmly adherent.

Dr. W. T. Bull said that not only was Dr. Sands to be congratulated on the fortunate issue of his case, but the society had reason to feel proud that one of its members had had the first successful case of the kind. Other surgeons would undoubtedly be encouraged by his success to operate early and thus be enabled to save many lives. However, he did not think that Dr. Sands's success was to be attributed entirely to the observance of the principles which he had set forth in his paper. That gentleman had drawn a sharp distinction between perityphlitis and septic peritonitis; but the average surgeon was unable to make such an exact diagnosis. The speaker was in favor of early operation in this case because of the difficulty of diagnosis and the uncertain course of the disease. His experience had agreed with that of the author so far as regarded the absence of tumefaction and symptoms of general peritonitis indicating operative interference. In all the cases that had come under his observation there had been no distinct tumor, but tenderness on palpation and increased resistance. Pain, nausea and vomiting, a rapid pulse, and elevation of temperature were all apt to be present at the beginning of perityphlitic abscess. It was possible that in the case reported the patient's symptoms might have improved in the course of the next twenty-four or forty-eight hours. The speaker did not think it advisable to wait for several days in order that an abscess might become ripe; the sooner the surgeon could explore with a needle and by further operation limit the extension of the abscess, the better for the patient. He thought that the author had exaggerated the danger of needle-punctures in these cases. Moreover, the fact that Dr. Sands had seen several fatal cases of perityphlitis, and had had frequent opportunities to note this condition post mortem, only proved that there were many cases in which early operative interference might have saved the patient. The exploratory operation was no more dangerous than the incision for ligature of the external iliac artery. The speaker believed that even the much-abused "general practitioner" might be trusted to use the exploring needle with benefit to the patient. He acknowledged that, personally, he often felt at a loss in making a diagnosis in cases of iliac phlegmon; on general principles he approved of early exploration with the needle, followed by an operation if pus was found. At the same time he did not go to the other extreme and advocate opening the peritoneal cavity on the second day after the development of moderate localized pain, accompanied by a slightly accelerated pulse and some elevation of temperature; it was certainly better to puncture first.

Dr. Sands said that the anatomical distinction between perforative peritonitis and perityphlitic abscess was not merely a matter of *opinion*. There was a distinct difference between the two, which it was important to bear in mind. If the same incision was made in a case of perforative peritonitis as when one was about to tie the external iliac artery, no good would be accomplished; one must attack the diseased part directly. If the abscess was retroperitoneal, the surgeon ought, if possible, to avoid wounding the peritonæum. He could not agree to Dr. Bull's statement that there was need of such haste in resorting to operative interference during the first forty-eight hours unless a diagnosis of perforative peritonitis could be made, when the sooner the operation was performed the better. If there was a perforation of the appendix vermiformis extending into the peritoneal cavity, the oblique incision—such as was made to reach a perityphlitic abscess—would be improper, because the disease could not be reached satisfactorily. The absence of an indurated tumor was a very important point in the diagnosis. The speaker had seldom seen a case of perityphlitic abscess in which no tumor was discoverable; in fact, in nearly every case in which he had been called in consultation the physician had called him *because* he had discovered a tumor in the iliac region. He was sure that the boy he had presented this evening would have died in the course of a very few days if an operation had not been performed. Perforative peritonitis was characterized by rapid and acute symptoms, while in perityphlitis the symptoms were more chronic. He did not understand how one could safely explore common perityphlitic swellings early without wounding the intestine or peritonæum; if a No. 3 or 4 aspirating-needle was used within the first forty-eight hours, harm would certainly be done. He had often thought of puncturing early, but had refrained. The two conditions referred to were so distinct that there appeared to be no reason why all cases should be included under the same head and treated in the same manner. If any early operation was done, the retroperitoneal was the best; still, the peritonæum might be opened, hence this was a serious operation, and might terminate unfavorably. If laparotomy were perfectly safe, he would always perform it; but, so far as our present knowledge went, the danger from early interference was greater than that from delay. Dr. Bull's recommendation to use the exploring-needle early was, Dr. Sands thought, not judicious. While the procedure might be comparatively safe in the hands of a competent surgeon, a teacher of surgery ought to be careful about recommending a doubtful expedient.

Dr. Bull said he still believed that early operative interference had done the most good in these cases, and that delay had furnished the frequent opportunities for post-mortem observation which the author had enjoyed. He was sure that all the members of the society had met with cases in which they regretted that they had not operated early. He felt obliged to dissent from the "seventeen authorities" cited by the reader. It was well known that writers frequently copied one another's opinions, and that errors were thus handed down. For example, it had been taught for years in the text-books that only the anterior surface of the cæcum was covered by peritonæum, until Treves showed that in one hundred dissections it was found to be wholly free in the cavity. The speaker thought that it was impossible to draw such a sharp line between extraperitoneal and intraperitoneal abscesses from a pathological standpoint. While it was true that the situation in which the pus was found varied, like the position of the appendix, this was no evidence that the pus was extraperitoneal, and in the operations he had done for these abscesses he had not been able to ascertain that the pus was without the peritoneal cavity.

Dr. Sands said that it was important to make a distinction between an operation performed on the second day after the development of the symptoms and that done when the abscess was ripe. He could not recall a case in which a perityphlitic abscess had done harm within forty-eight hours; but it was different with perforative peritonitis. He would operate in perityphlitis at any time when it was necessary, but he insisted that early operations, as usually performed and advocated, were dangerous. Many of the authorities to whom he had alluded had presented not simply "opinions," but anatomical demonstration. These authorities stated clearly that abscesses were generally strictly retroperitoneal. Wynkoop had described the post-mortem appearances observed in the case of a person who had been successfully operated upon two years previously for perityphlitic abscess by Parke. The appendix had been perforated, and the abscess had evidently been extraperitoneal. Careful observers had always stated that it was an unusual circumstance for abscesses in the iliac region not to be extraperitoneal. Treves's discovery had nothing to do with the question under discussion. It was argued that, as the cæcum and appendix were completely covered with peritonæum, a perforation of their wall would therefore cause general peritonitis. But, when a perityphlitic abscess developed, such development was preceded, he contended, by the formation of adhesions which determined the passage of the fæcal matters into the loose retroperitoneal connective tissue; hence general peritonitis was less frequent. Everything, he believed, pointed to the fact that perityphlitic abscesses were extraperitoneal. If they were not, why did not the surgeon oftener see the peritonæum when opening them? The speaker had never seen it. If he had, he could not have mistaken it, as the appearance of the membrane was perfectly characteristic.

Dr. J. A. Wyeth reported the following case, which seemed to bear upon the point under discussion: Two weeks ago the previous Monday he was called to see a girl, sixteen years of age, who had been perfectly well until Thursday. On the afternoon of the latter day she complained of slight pain in the right iliac region. She was seen by her physician, and the following morning was better, but at noon she rapidly grew worse, having severe pain in the umbilical region, accompanied by vomiting. Symptoms of intestinal obstruction developed, and on Saturday and Sunday the vomiting was stercoraceous. On Sunday she was seen by several physicians, and as a result of this consultation she received in the following twenty-four hours thirty grains of calomel, half a grain of elaterium, and ten drops of croton-oil. The speaker saw her on Monday afternoon, made a diagnosis of intestinal occlusion with probably double intussusception at the ileo-cæcal junction, and advised an immediate operation as offering the only hope. It was performed at 8 P. M., the abdomen being opened in the median line, as the intention was, owing to the desperate condition of the patient, to give prompt relief by making an artificial anus, with the view of performing a subsequent operation. The intestines were found to be intensely congested, as a result of the violent remedies used. An obstruction was found, apparently at the ileo-cæcal junction. The artificial anus was quickly established, but the patient died two hours after the operation. At the autopsy it was discovered that the obstruction was in the ileum, within a foot of the cæcum. There was a localized inflammation of the appendix and peritonæum, due to a grape-seed that had lodged in the appendix and had almost perforated its wall. To the inflamed surface of the appendix two points of the ileum (about eight inches apart when the gut was straightened out) were adherent, thus completely obstructing the intestinal canal. The causes of the disastrous termination were the great error of administering such severe doses of purgative medicines and the unnecessary delay in asking for operative interference.

Dr. F. Lange asked Dr. Sands if he had ever opened a perityphlitic abscess through the rectum.

Dr. Sands replied in the negative.

Dr. Lange said he had done so in four cases which had been treated for and presented the clinical features of perityphlitis. In these cases, besides the usual induration in the region of the cæcum, a fluctuating swelling and protrusion could be felt in the region of Douglas's space. Two of these cases occurred in children of about ten and twelve years, two in male adults. In two cases the opening through the rectum was added to the usual external incision. Recovery took place in all of these cases as well as in a fifth case, where, on his advice, the operation was done in the same manner. He was under the impression that probably no small percentage of so-called perityphlitic abscesses were intraperitoneal. The fact that in his cases of opening through the rectum the discharge ceased very rapidly seemed to be in favor of this assumption, because abscesses in the loose retroperitoneal tissue would probably not heal so soon. He also remembered that in some of these cases the contents of the abscess-cavity were not quite homogeneous, but at intervals during the operation of a more sero-purulent character.

In operating for perityphlitis by the usual incision, it must necessarily be a difficult thing to decide whether one was working within the peritonæum or not, the anatomical distinction of the thinned walls of the abscess being hardly possible. With reference to the condition of the peritoneal layers as illustrated by one of Dr. Sands's drawings, he might be allowed to mention a case in which he had operated about ten days ago. By the usual incision the peritoneal cavity was opened, the peritonæum not being adherent. Below the parietal peritonæum not the opposite layer of the peritonæum was found, but omentum, which seemed to form the covering of the abscess. The peritonæum was carefully closed again and the abscess was opened more laterally. The patient was now making a good recovery.

He had assisted as consultant in a case where laparotomy was performed for peritonitis caused by perforation of the appendix by fæcal stones. In another case he had operated himself without being able to make out the seat of perforation. Both patients had purulent general peritonitis and died soon after the operation. Both these patients had come under his observation too late, and the operations were done under a very unfavorable prognosis.

The Chairman read the following history of a case of perityphlitis that had occurred in his service at the Presbyterian Hospital: H. D., aged eighteen, single, born in Ireland, by occupation a driver. He was admitted to the medical department on January 10, 1888. On admission he stated that he had been troubled with pain in the right iliac region for eleven days; at first he had vomiting, loss of appetite, and pain, but no chill or sweating. The bowels had moved daily. On admission, there were deep-seated induration, resistance, and pain on pressure in the right iliac fossa, but there was no fluctuation. The temperature was 101° F. He was transferred to the surgical department on January 26th, when it was found that his condition was not materially altered. An incision three inches long was made in the right iliac region, an inch to the inner side of the anterior superior spine, and was continued downward and inward an inch above Poupart's ligament. The subserous connective tissue was found to be infiltrated with inflammatory products. A hypodermic needle, introduced in an upward direction, withdrew a very small quantity of pus; while the needle was *in situ* the abscess was opened by cutting along the needle. The cavity contained about an ounce of thick pus. No secondary pockets of pus could be found, and the gut was not seen.

January 27th.—Wound doing well. Until within the past three days the patient has had a dejection every other day; for three days he has been constipated. To-night he has vomited several times, the vomited material consisting of the gastric contents and mucus.

28th.—Between 1 and 6 A. M. the patient vomited three times, each time the vomited matter being fæcal. There is marked lancinating, colicky pain referred to the region of the umbilicus, with some abdominal tenderness, but no tympanites. Percussion of the abdomen gives negative results.

29th.—During the paroxysms of pain the intestines can be seen elevating the abdominal wall a little to the left of and immediately below the umbilicus. Temperature, 98° to 99°; pulse, 80 and full. A quarter of a grain of calomel was ordered every three hours, with a large enema. At 4.30 P. M. the patient was chloroformed and inverted. Water to the amount of seven pints and a half was injected into the rectum through a funnel. On resuming the dorsal decubitus the water returned clear. Abdominal massage was practiced for forty-five minutes, after which the patient received hypodermatically sulphate of morphine, gr. $\frac{1}{8}$, and sulphate of atropine, gr. $\frac{1}{96}$.

30th.—The patient vomited mucus last night, and to-day has had three liquid stools, the entire amount of fæcal matter evacuated being two ounces. He is free from pain.

31st.—To-day the patient passed a large scybalous fæcal mass measuring two inches and a half by an inch and a half, and pear-shaped.

February 1st.—He had a large normal movement to-day, and, as he has had no return of the pain, he is allowed regular diet.

In commenting upon this case the speaker said that he was not sure whether a loop of intestine had become attached to the edge of the incision, the adhesion being subsequently stretched or torn by the injection, or whether the obstruction was due to a fæcal accumulation. He agreed with Dr. Sands that there was danger in operating too early. He had seen two fatal cases of perityphlitic abscess; in the last he believed that the abscess had ruptured into the peritoneal cavity. He thought that there were two distinct varieties of abscess, the extra-peritoneal and the intra-peritoneal, each giving rise to characteristic symptoms.

Dr. S. Baruch, present by invitation, said that his experience in former cases of perforation had been unfortunate. He had had three others similar to the present one, all of which had terminated fatally. During his first fifteen years of practice he had never met with a case of perityphlitis; during the last eight years he had seen eleven.

The histories of the fatal cases of perforation were briefly as follows:

Case I occurred in 1881. The patient, a young man aged eighteen, when first seen at his office had tenderness in the right iliac region, the temperature being 101°. Morphine and poultices were ordered, and relieved the pain. He suddenly collapsed, and died on the third day of general peritonitis. Seen by Dr. Delafield.

Case II occurred in 1883. The patient was a boy aged eleven. He complained at first of pain over the right ilium. The next day there was tenderness over the iliac region. Pain was relieved by morphine. Seen by Dr. Loomis and Dr. Weber. An operation was advised by Dr. Weber, but it was too late. He died on the third day of general peritonitis.

Case III occurred in 1884. A boy, aged twelve, was seen in the morning, when a grave prognosis was given. The following day he suddenly became collapsed, and died within forty-eight hours.

The inference which he had drawn from his observation of these cases was that this affection should be regarded from the outset as a purely surgical one, and that prompt action alone would save the patient. The patient whose history had been read was seen at 8 A. M., when the diagnosis of localized peritonitis was made, from exquisite tenderness over the right iliac region, from his having vomited during the previous night, and from his decubitus. The temperature was 102·4°, the pulse 120. No food or medicines were ordered except morphine and hot poultices. At noon the temperature was 101°, and there was no pain or vomiting. The next morning the temperature was the same, but there was now decided dullness on percussion, and there was still much tenderness over the right iliac region with some tenderness over the left on pressure. The boy was lying with his knees drawn up, a sign which the speaker had noted in all his other cases and regarded as pathognomonic. Although the temperature was a degree lower than it had been on the previous morning, although there had been no vomiting since that time and no pain requiring the morphine which had been ordered, the other symptoms pointed to the fact that there was no change in the local peritonitis, and, bearing in mind his three fatal cases, he called Dr. Sands in consultation to discuss the advisability of prompt surgical action. The operation was performed thirty-two hours after he first saw the case. The speaker thought that the symptoms of perforative peritonitis were usually clear and distinct. They developed suddenly, the patients being more frequently young boys. Suddenness of the attack, pain and vomiting, exquisite tenderness in the iliac region, and the peculiar decubitus mentioned, were characteristic features. In every case of ordinary perityphlitis, except one with abscess, that he had seen the diagnosis had been more or less doubtful, for the patients had recovered. He had recently seen a case at the Manhattan Hospital in which the symptoms were clearly marked; between four and six ounces of pus were removed and the patient was doing well. In the case reported by Dr. Sands pus had formed within forty-eight hours from the first appearance of symptoms. Ordinary perityphlitis, on the contrary, progressed much more slowly than perforative peritonitis, and was not accompanied by such exquisite tenderness.

Dr. Sands thought that it was difficult to prove that an abscess was within the peritoneal cavity; it was true that during the exploration coils of intestine might be seen, but not the peritonæum itself. He was absolutely certain when he opened the abdomen of the boy who had been shown that he would *not* find a perityphlitic abscess. It was important for the practitioner in charge of such a case to be able to tell not only that pus was present, but where it was located, since it was dangerous to operate in every case indiscriminately.

Dr. Wyeth asked the speaker if he thought that simple exploratory puncture of the peritoneal cavity was a dangerous procedure.

Dr. Sands replied that he would be afraid in such cases lest the needle should become contaminated and infect the peritonæum. He strongly advocated an early operation, however, in perforative peritonitis; in fact, the surgeon could not operate too early. If the abscess was retroperitoneal we should, in case a very early operation was performed, make a lateral incision and lift up the peritonæum.

The Chairman said that the late Dr. Buck had reached retroperitoneal abscesses in this manner by making an incision parallel with Poupart's ligament and raising the peritonæum.

Dr. Sands replied that the cases which Dr. Briddon referred to were subfascial, and not perityphlitic abscesses.

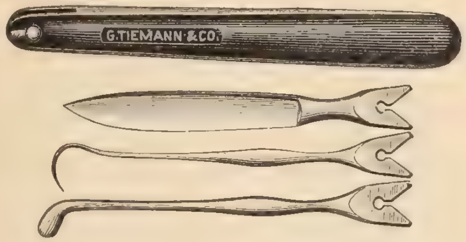
New Inventions, etc.

AN ASEPTIC OBSTETRIC CASE.

By H. G. V. de Hart, M. D.,

PLEASANTVILLE, WESTCHESTER CO., N. Y.

For many years I have been convinced of the dangers to which the lying-in patient is exposed by reason of the too common and indiscriminate use of instruments, etc., taken from the ordinary pocket-case. To guard against sepsis I have usually reserved certain instruments for this class of patients, yet have not been altogether satisfied with my method. But I am enabled at this time, through the efficient co-operation of Messrs. George Tiemann & Co., 107 Park Row, N. Y., to present through your columns to the profession an "Aseptic Obstetric Case" containing everything needed in the "lying-in" room outside the long and short forceps. Its contents are as follows: Silk, silver, copper, and iron wire (for sutures); 12 safety pins (two sizes); 6 plastic pins; 6 needles (assorted); 1 soft catheter; 1 silver probe; 1 caustic-holder; 1 thumb lancet; 1 umbilical clamp; 1 pair of straight scissors; 1 dressing forceps (open ring); 1 bull-dog forceps and needle-holder combined; 1 patent (B) handle (see cut); 1 tenaculum (see cut); 1 gum lancet (see cut); 1 scalpel (see cut); 12 ʒij bottles; 1 pocket for birth reports, etc. The above-mentioned are contained in a neat Russia leather case so shaped as to be conveniently carried in the coat-pocket. Its compactness, portability, and thorough "asepsis" possibilities render it a desirable case for the rural practitioner.



Miscellany.

The Cumulative Action of the Galvanic Current.—At a recent meeting of the Section in Theory and Practice of Medicine of the New York Academy of Medicine, Dr. A. D. Rockwell read a paper on this subject. He used the term cumulative to express the increased efficiency of the galvanic current when it was applied along the course of a nerve without interruption. One well-known factor that went to make up this increase was the better conductibility of the tissues gradually taking place at the seat of the recomposition of the current, due to congestion of the skin and adjacent parts under the electrodes. That, however, this explanation of the increasing strength of the current when continuously passed through living tissue was but partial he had often demonstrated. On the application of a current from a given number of elements to the arm and forearm, seven milliampères were immediately registered. In two minutes there was an increase of one degree, in two minutes more an additional degree, and in eight minutes twelve milliampères were registered. That this increase of strength was not caused by improved conduction simply was evident from the fact that when vigorous friction was applied to the other arm, producing congestion as intense as that caused by the electricity, the application of an equal strength of current would not equally affect the galvanometer until after the lapse of several minutes. Another phenomenon was the increased strength observed upon a reversal of the direction of the current. It was difficult to analyze the molecular disturbances that evidently took place during the passage of the galvanic current, but without doubt this increase of strength was due to the electrolytic or polarizing action of the current, exciting a secondary current in the living body, similar to what was observed in the reservoir or secondary pile. The laws of electrotonus were of great value, but they did not account for the therapeutical activities of electricity so much as phenomena of a purely physiological or physico-chemical order.

It was in the treatment of paralysis in its various forms that these cumulative effects of electricity would seem to be of special value. In cases of hemiplegia where the irritability of the nerve was more or less impaired, the continuous passage of the current accomplished more for the patient than the attempts at frequent muscular contractions that were so popular. The difference in the treatment of hemiplegia with increased nerve irritability and hemiplegia with decreased nerve irritability was simply this: in the former it would be as inadmissible to allow interruptions of the current or a change in its direction as it would in certain cases of neuralgia; in the latter, on the contrary, a few interruptions could be made with good effect at the close of an uninterrupted *séance*, and a reversal of the current added to the efficacy of the treatment. In cases of infantile paralysis especially, great and irreparable damage had often been inflicted by the excessive stimulation of interrupted currents. The continuous passage of the current, on the other hand, while in a certain sense stimulating in its effects, combined influences that were sedative and tonic, and was alone equal to the task of resisting progressive degenerative changes in nerve and muscle. Cases were cited by Dr. Rockwell showing that undue stimulation was destructive rather than reconstructive. One case of infantile paralysis was given where interrupted currents had well-nigh extinguished every vestige of vitality in the paralyzed member. In a few groups of muscles slight contractions were obtainable, the reactions being chiefly those of degeneration. Persistent effort in the direction of improving nutrition by the cumulative action of the current had resulted in marked improvement and approximate recovery in a case regarded as hopeless.

In the treatment of neuralgias, hysteria, chorea, epilepsy, and exophthalmic goître, the principles concerning the cumulative action of the current were regarded by the speaker as also important. In all these conditions it was not stimulation but sedation that was desirable, and therefore interruptions of the current, and, as a rule, even large and rapid variations in its density, were to be avoided. Exophthalmic goître could, according to the author's experience, be treated with far greater success than was generally believed. He had himself reported fifteen cases, of which nine had been either approximately or completely cured. It seemed hardly necessary to say to any one cognizant of the peculiar characteristics of the disease that uninterrupted and unvarying currents were usually called for. There were, however, exceptions to this rule. Certain cases seemed to demand a stronger impression than could be produced by a constantly flowing galvanic current. They would act badly under interrupted currents, but by rapid and large variations in the closed circuit a modified stimulation was produced, which, in his own experience, had proved of invaluable service in several difficult cases.

Bruzelius on Multiple Neuritis.—An esteemed contributor has sent us the following abstract of a paper by Professor Bruzelius, published in a recent number of the "Nordiskt medicinskt Arkiv":

This disease, though rare, is not so uncommon as is generally believed, inasmuch as it is often involved with other morbid conditions and referred to under various names, such as anterior acute poliomyelitis, peripheral paralysis of motion and sensation, acute progressive neuritis, and general parenchymatous neuritis. In a case related, which may be regarded as typical, not only were the extremities and trunk affected, but even the region of the cranial nerves. The patient, a laboring woman, seventeen years of age, after exposure to cold and wet, while at hard work, became restless and nervous. Then the power of sensation was lost in both legs below the knees, and in three fingers on the ulnar side of each hand; and the power of motion was very imperfect. On the seventh day from the outset of the disease there was deep, dull pain in the legs, with inability to stand and formication; motion was lost in both arms, the left having been first affected. Afterward the head only, of the whole body, could be moved a little. The facies, tongue, pharynx, and ears were deranged in motion and sensation (pareathesis and paresis). The special senses were perturbed and lessened in acuteness, and headache was present. The heart, kidneys, bladder, stomach, and bowels seemed normal in function, and the intelligence was not affected. There was a history of initial fever; on the fourteenth day the temperature was 41° C. (105·8° F.), with much sweating. By the eighteenth day improvement was perceptible, the headache and anæsthesia being less, but now hyperæsthesia began, so that "the clothes were unbearable." Sensation returned first in the left arm, then in the right; pain ceased, and motion was noticed in the feet. On the thirty-third day the temperature, hearing, taste, and smell were normal, though loss of function yet continued in the region of the distribution of the facial nerve. The arms seemed nearly normal as to motion. The interosseous and thenar muscles of the hands were notably atrophied. The two lower extremities were almost completely destitute of motion and sensation. There was anæsthesia of the skin of the trunk and limbs. The patellar and plantar reflexes were absent. Firm pressure on the muscles was painful, but especially so when made over the points of emergence of nerve trunks. The thoracic and abdominal viscera acted normally, except for the existence of a little mucus and albumin in the urine, which latter was not noticed ten days later. On the forty-sixth day urticaria was seen on the arms, but it had disappeared on the next day. On the forty-eighth day the patient felt numbness and formication in both legs. The day after, the feet were stiff. She was first able to stand on the fifty-fourth day. The plantar reflex returned on the fifty-seventh day, and the patellar on the ninetieth. The patient was discharged on the ninety-sixth day from the beginning of the disease, apparently well. We find a detailed result of electrical examinations of the nerves and muscles at different times, and the æsthesiometer was also used; both showed the gradual improvement. As to treatment, quinine and baths are mentioned, and electricity was applied during the last month. In this case, while disordered sensation in the body and limbs pointed toward the spinal cord, the peripheral character of the trouble in the head made a diagnosis of multiple neuritis probable.

In another case, which began with paræsthesia and paresis, the disease was recognized by pain and lameness in the extremities, notable derangement of sensation, muscular atrophy, and absence of the skin reflex. The bladder and rectum acted normally. Electrical examination showed the degenerative reaction, the muscles responding to the galvanic current, but not to the faradaic. It may be said that these are the chief symptoms of this affection.

Reports of many cases do not show a febrile inception, because, presumably, the early stages are passed before the patient is observed. In some instances the onset is acute, with high fever and numbness; in others, loss of motion is the chief symptom. The acute form has been thought to be a miasmatic infectious disease, the cases being considered as sporadic examples of beri-beri. Weakness in the legs is generally an early sign. Sometimes a certain nerve district alone is involved at first, or the attack may be wide-spread. Indications of abnormal sensation are less pronounced and less constant than those of motor disturbance, which is regarded as of importance in the differential diagnosis of acute anterior poliomyelitis. Paræsthesia usually precedes paralysis, as atrophy follows it. Spontaneous pains, varying from slight to severe, have been noted in most cases, suggesting acute articular rheumatism; yet the disease may run its course without them, as is shown by post-mortem examinations. Lowered sensibility is of greater diagnostic value than pain, but of less than diminished motion. Tenderness on pressure over muscles and nerves, with cognate atrophy, has been noticed by several observers. There may be hyperæsthesia of the skin. The reflexes are usually slight or absent, though instances, considered typical, have been reported in which those of the patella and skin were present. Data on the electric condition are meager and incomplete. Œdema and swelling of the joints are seldom seen, except in fatal cases. The disease is commonly limited to the extremities, parts essential to life not being often involved, and, when they are, only in sequence to those already mentioned. The causes seem to be cold, dampness, and overexertion (like those giving rise to beri-beri). May we not surmise that a certain temperament (the lymphatic, for example) is a predisposing condition of no little importance? Alcohol, if not originating this morbid state, seems to give it a peculiar impress, resulting in ataxic symptoms which make one think of tabes dorsalis. (Compare "Holsti's Views on Arterio-capillary Sclerosis," "N. Y. Med. Journal," Nov. 20, 1886.) Endarteritis might indirectly be a factor in the production of such lesions.

The prognosis is various. Death may occur in a few weeks from failure of the respiratory muscles, but this is rare. Usually in course of some months the symptoms disappear. Sometimes permanent paralysis of motion or sensation remains; and a fatal end, after long illness, may ensue from intercurrent disease, such as tuberculosis, nephritis, etc.

A study of the literature of the subject brings to light a lack of proper details in the examination and description of cases, with considerable doubt as to the diagnosis. Much new work is needed, both in clinical observation and in pathological anatomy, ere we shall have a satisfactory picture of multiple neuritis. The view held at present is analogous to that recently held concerning the significance of albumin in the urine, the causal relations of which seem now about to assume a scientific physiognomy.

Cascara Sagrada (Rhamnus Purshiana).—Recent investigation of the constituents of *Cascara sagrada* has led to the discovery of new principles and facts of great importance pharmaceutically and therapeutically. The chief objection to *Cascara sagrada* heretofore has been its inherent bitterness, but it seems that tasteless preparations of this drug, highly efficacious medicinally, are now to be had. These discoveries are considered a distinct advance in pharmaceutical attainment and in the therapeutics of chronic constipation, since this remedy can now be much more generally and persistently administered, and its well-known tonic laxative action obtained without the drawbacks which seemed formerly inseparable from its employment. The facts disclosed indicate the existence of principles and modes of action extending far beyond the subject indicated, and are well worth the close attention of the thoughtful and scientific physician. A valuable contribution to our knowledge of the chemical constitution of this drug, by Mr. H. F. Meier and Mr. J. Leroy Webber, appeared in the "American Journal of Pharmacy" for February, 1888, which not only makes it possible to obtain a true interpretation of the various clinical observations, but clears up apparent anomalies, and also indicates the reasons for observed effects which have lately been disputed, but now admit of no further question or misunderstanding. Among the discoveries of special interest to the physician referred to in the paper is the influence of a class of vegetable ferments and their recognition as the causes of various abnormal conditions—such as colic, vomiting, nausea, diarrhœa, and dysentery—which occasionally attend the administration of certain drugs. It appears that frangula bark, when fresh, contains such a ferment in excessive quantities, and is therefore unfit for use until the ferment has exhausted itself—the process usually occupying several years. It also appears that cascara contains some of this principle, and this fact will account for the occasional untoward effects of the drug which have been observed as consequent on the employment of a number of its preparations heretofore in the market. These effects are, therefore, not due, as has been supposed, to any idiosyncrasy on the part of the patient, or to the laxative or tonic constituents of the bark itself, but to a distinct objectionable principle which, once recognized, canbe rendered inoperative and harmless.

Messrs. Parke, Davis, & Co., of Detroit, have clearly recognized the principles involved, and by their application have formulated and adopted correct pharmaceutical processes and thus overcome all the difficulties heretofore existing. As a result of their investigations, they now offer to the medical profession a fluid extract, a solid extract, and also a con centration, all of which (designated as "formula of 1887") exhibit only the desirable laxative and tonic properties, and, being free from this ferment, are incapable of producing griping, nausea, or any of the evil effects above mentioned. It appears that these ferments are distributed through a large number of vegetable substances, and are not confined to unripe fruits, but may also exist in the root, bark, leaf, or even vegetable extracts, of which we have illustrations in various juices, liquid or inspissated. Of this latter class aloes will serve for an example. A familiar illustration of an unaltered vegetable would be the cucumber, the green apple (familiar to the school-boy), and unripe fruit generally. In the case of the cucumber, experience has taught the means of removing this ferment by dialysis or osmosis. We sprinkle salt over it or surround it with a strong brine, which provokes an outward flow of the fluid containing the ferment, with the result that the ferment is to a large extent removed, and thus rendered incapable of producing the same conditions in the stomach for which it was intended in the plant—that is, the creation of vegetable acids from other material previously existing, in the same manner that pepsin, likewise an unorganized and soluble ferment, provokes the solution of fibrin and albumin, forming peptone, or as diastase is capable of effecting the transformation of starch into soluble glucose and dextrin, both new bodies. That these ferments all bear a direct quantitative proportion to the results accomplished has been practically recognized. We are promised a satisfactory indication of the sources of the acids formed in the plant which will enable us to corroborate the statements that identical processes go on in the stomach when the ferment is permitted to exert its action there. The physiological tests now being conducted at the laboratory of Messrs. Parke, Davis, & Co. with the different principles contained in the plant are expected to demonstrate finally not only the superiority of cascara to frangula, but also its comparative value as a laxative.

The Seventh German Congress of Internal Medicine will be held in Wiesbaden from the 9th to the 12th of April, inclusive, under the presidency of Dr. Leube, of Würzburg. The business committee consists of Dr. Nothnagel, Dr. Pagenstecher, Dr. Binz, and Dr. Curschmann, and Dr. Emil Pfeiffer, of Wiesbaden, is the permanent secretary. The programme is as follows: *April 9th.*—"Chronic Diseases of the Muscular Tissue of the Heart and their Treatment" (reporters, Dr. Oertel, of Munich, and Dr. Lichtheim, of Bern). *April 10th.*—"Alcohol as a Remedy" (reporters, Dr. Binz, of Bonn, and Dr. von Jaksch, of Gratz). *April 11th.*—"The Prevention and Treatment of Asiatic Cholera" (reporters, Dr. Cantani, of Naples, and Dr. August Pfeiffer, of Wiesbaden). In addition, the following-named papers are promised: "On Displacement of the Heart," by Dr. Rumpf, of Bonn; "Experimental Investigations of the Mechanism of the Respiratory Movements," by Dr. Unverricht, of Jena; a paper (subject not announced) by Dr. Liebreich, of Berlin; "On Combined Degeneration of the Spinal Cord," by Dr. Adamkiewicz, of Cracow; "Experimental Contributions to the Dietetic Treatment of Digestive Derangements," by Dr. Jaworski, of Cracow; another paper by the gentleman last mentioned (subject not announced); "The Treatment of Basedow's Disease," by Dr. Stiller of Budapest; "The Diagnosis of Renal Tumors," by the same author; "The Excretion and Elimination of Uric Acid," by Dr. Emil Pfeiffer, of Wiesbaden; "The Pathogeny of the Epileptic Seizure," by Dr. Binswanger, of Jena; and "On Cryptogenetic Septico-pyæmia," by Dr. Jürgensen, of Tübingen.

The Society of the Alumni of Bellevue Hospital.—A little more than a year ago an association of alumni of Bellevue Hospital was formed for the purpose of encouraging scientific medical work and social intercourse among its members. As several attempts of a similar nature had previously been made without success, it seemed best to the founders to limit the association at first to the recent internes of the hospital, and only those who had served since 1880 were then made eligible for membership. The society has been very successful thus far, and it has attained the objects for which it was founded to such an extent that it has been determined now to enlarge the scope of the association so as to include all who have at any time served the full term on the house staff. The meetings are held on the first Wednesday of each month, except July, August, and September. The membership has grown rapidly, and it is thought that it will include more than a hundred by the end of this year. We have published the proceedings of several of the meetings, and regarded them as among the best of the material that we could lay before our readers. At present the officers of the society are Dr. Hermann M. Biggs, president; Dr. Leroy W. Hubbard, vice-president; Dr. Fred W. Gwyer, secretary; and Dr. Robert J. Carlisle, treasurer.

It is proposed to issue in 1888 the second catalogue of the former and present internes of the hospital, including lists of the present and former members of the visiting and consulting staffs, the constitution of the different staffs, and such other information in regard to the hospital as may properly belong there. As no available record is to be obtained, the importance of the publication of such a catalogue will be appreciated. The work has been undertaken by the society, and the catalogue will be published under its supervision. It will be the aim of the committee in charge to make the work as complete as possible, and to publish it at an early date. The committee consists of Dr. Hermann M. Biggs, Dr. Fred W. Gwyer, Dr. Willis W. French, Dr. Samuel Alexander, and Dr. Reginald H. Sayre.

The University of the City of New York.—The Loomis Laboratory and the other buildings of the Medical Department, in East Twenty-sixth Street, were open for inspection last Monday evening.

The "Memphis Medical Monthly" is now the title of the excellent journal formerly known as the "Mississippi Valley Medical Monthly."

The New York Clinical Society.—At the recent annual meeting, officers for the ensuing year were chosen as follows: President, Dr. J. West Roosevelt; vice-president, Dr. George M. Tuttle; secretary, Dr. F. W. Murray.

The Health of Boston.—During the week ending Saturday, February 25th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 21 cases and 3 deaths; scarlet fever, 23 cases and 3 deaths; typhoid fever, 4 cases and 1 death; measles, 36 cases. There were also 31 deaths from consumption, 26 from pneumonia, 4 from whooping-cough, 18 from heart disease, 13 from bronchitis, and 1 from marasmus. The total number of deaths was 198, against 157 in the corresponding week last year.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality," there were 650 deaths during the month of January, including 1 from cholera morbus, 1 from cholera infantum, 20 from croup and diphtheria, 2 from dysentery, 1 from diarrhœa, 2 from erysipelas, 23 from typhoid fever, 11 from measles, 1 from pyæmia, 4 from syphilis, 1 from septicæmia, 3 from scarlet fever, and 27 from small-pox.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending February 24th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending February 4th corresponded to an annual rate of 21·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bradford, viz., 13·4, and the highest in Plymouth, viz., 32·2 in a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, and 1 in Leeds.

London.—One thousand eight hundred and ninety-four deaths were registered during the week, including 18 from measles; scarlet fever, 38; diphtheria, 29; whooping-cough, 177; enteric fever, 26; and diarrhœa and dysentery, 15. Diseases of the respiratory organs caused 516 deaths; different forms of violence, 55; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 23·1 in a thousand. In greater London 2,370 deaths were registered, corresponding to an annual rate of 22·4 in a thousand of the population. In the "outer ring" 10 deaths from diphtheria and 41 from whooping-cough were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending February 4th in the sixteen principal town districts of Ireland was 29·5 in a thousand of the population. The lowest rate was recorded in Londonderry, viz., 7·1, and the highest in Cork, viz., 40·2 in a thousand. In Dublin 202 deaths were registered, including 2 from measles; whooping-cough, 10; scarlet fever, 6; enteric fever, 4; diarrhœa, 1; and dysentery, 2.

Netherlands.—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,102,200, during the month of December, 1887, corresponded to an annual rate of 22·1 in a thousand. The lowest rate was recorded in Groningen, viz., 16·6, and the highest in Haarlem, viz., 24·8 in a thousand.

Santiago de Cuba.—The sanitary inspector reports for the week ending February 11th, 1 death from yellow fever at the military hospital, and that small-pox has broken out again at the village of Cristo, eight miles from that city.

Havana.—One death from yellow fever and 38 from small-pox are reported for the week ending February 11, 1888.

Berlin.—The United States minister, in his dispatch under date of January 30th, transmits copies and translations of two articles taken from Berlin newspapers containing reports, which have not been contradicted, of further alarming outbreaks of trichinosis in that country. The articles referred to are as follows:

Görlitz, January 23d.—Trichinosis has continued to spread in the Saxon boundary region. The attacks of the disease are no longer confined to Ober-Cunewalde, but have also occurred in Oppach, Laivaldè, Beiersdorf, Lauba, Halbau, etc. The number of persons attacked is already over 100. Three cases have as yet resulted fatally. As regards the origin of the disease, it is said that a butcher of Ober-Cunewalde on Christmas eve made to his customers a present of smoked sausages, in the preparation of which, meat containing trichinæ had been used. In all the families which had received and eaten those sausages attacks of the disease occurred.

From Saxony, January 26th (own correspondence).—In view of the visitation of epidemics of the trichinosis with which several places in Saxony have of late been afflicted, the local authorities (Amtshauptmannschaft) at Plauen i. V. have recently issued a decree urgently recommending to the individual communities of the district the introduction of obligatory examination for trichinosis. In Ober-Cunewalde the persons attacked by the disease have attained to the number of about 170, and 9 deaths have hitherto occurred. At the village of Obersachsenfeld, near Schaufenberg, a new epidemic of trichinosis has broken out, resulting as yet in the occurrence of 20 cases of the disease. At Ober-Cunewalde a committee has been formed to aid the poor among the persons attacked.

Mortality Table, Foreign Cities.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	February 4.	2.260,945	1,187	..	....	11	....	25	7	51
Glasgow	February 4.	545,678	264	..	....	....	....	1	6	6
Warsaw	February 28.	439,174	215	..	....	7	....	....	4	3
Rome	December 31.	373,356	218	..	....	7	....	2	....	3
Copenhagen	January 31.	300,000	130	..	....	....	....	2	7	7
Edinburgh	February 4.	262,733	98	..	....	....	....	....	1	....
Palermo	February 5.	250.000	135	..	....	....	....	....	3	4
Bristol	January 28.	226,510	117	..	....	....	....	1	1	....
Belfast	February 4.	224,422	149	..	....	....	....	1	....	1
Genoa	February 4.	179,353	135	..	....	6	2	....	....	4
Trieste	January 28.	154,500	123	..	..	4	....	1	1	1
Havre	February 4.	112,074	90	..	....	6	....	1	....	....
Reims	January 28.	97,903	61	..	....	1	....	1	....	5
Reims	February 4.	97,903	61	..	....	....	....	1	....	4
Merida	January 26.	48,711	39	..	1	....	....	1	....	....
Cienfuegos	February 6.	25,000	63	..	....	53	....	1	....	....

United States.

San Francisco—Small-pox.—The secretary of the health department erports that from January 1st to 31st there were 224 cases and 27 deaths, and from February 1st to 14th there were 60 cases and 7 deaths from small-pox.

The New York Academy of Medicine.—At the next meeting of the Section in Neurology, Friday evening, March 9th, Dr. W. Oliver Moore will read a paper entitled "Ocular Symptoms in Diseases of the Spinal Cord," and Dr. Henry Ling Taylor will read on "The Hygiene of Reflex Action."

At the next meeting of the Section in Surgery, Monday evening March 12th, Dr. F. W. Murray will read a paper "On Aneurysm of the Internal Pudic Artery," Dr. A. J. McCosh will read one "On a Case of Nephrolithotomy," and Dr. G. L. Huntington will read one "On the Operative Treatment of Old Injuries of the Elbow Joint."

At the next meeting of the Section in Orthopædic Surgery, Friday evening, March 16th, Dr. S. Ketch will read a paper entitled "The Present Status of the Treatment of Rotary Lateral Curvature of the Spine."

ANSWERS TO CORRESPONDENTS.

No. 152.—For a patient who was simply asthmatic, we think neither of the regions you mention could be said beforehand to be decidedly preferable to the other; different localities within very narrow limits often affect asthmatics in quite an opposite manner. For a patient with emphysema, we think the climate of southern California offers some advantages.

No. 153.—Try lactopeptine.

No. 154.—The report has not yet been published.

No. 155.—The lectures are free to all medical men. They are clinical in character.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, MARCH 10, 1888.

Original Communications.

THE USE OF CAUSTICS IN THE NASAL CAVITIES.*

By F. H. BOSWORTH, M.D.,
PROFESSOR OF DISEASES OF THE THROAT IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE.

It is a tradition as old as medicine that catarrhal disease of the nasal passages gives rise to an excessive discharge. I have on several occasions warmly controverted this idea, and argued that, on the contrary, the secretions were diminished in what we call nasal catarrh.

Another tradition of almost equal antiquity concerning nasal disorders is that the secretions are acrid and irritating. On the contrary, I believe that no glandular structures in the body pour forth a blander or less irritating secretion than those located in these passages. Based on these incorrect views, the treatment has been, from time immemorial, to make applications of astringents and disinfectants, to control in the one case the excessive discharge, and in the other to correct the fœtor or acrid character of the secretions.

I think we all now recognize the inadequacy of these measures to control nasal disorders, and are compelled to acknowledge that their use was based on an entirely mistaken conception of the true pathology of the disease with which we had to deal.

These measures failing, therefore, we can easily understand how the use of caustics was resorted to, as offering an agent far more powerful in its action, and one from which results of some decided character might be anticipated; nor has this expectation been disappointed. The question, however, suggests itself immediately, On what theory or conception of the disease has the use of this agent been based? As far as I can appreciate the writings and practice of the past thirty years, the main idea has been that we have to do with a diseased membrane which has something the character of the efflorescent and unhealthy granulations which spring up on wounded surfaces, and which must be destroyed. This certainly is the suggestion if not the written assertion in much of our literature, and is also the popular impression. Here again, I think, is an entirely erroneous view, for, while caustic applications constitute one of our most valuable remedies, and their judicious use is attended by the best of results in dealing with nasal disorders, microscopic study of the nasal mucous membrane in disease fails to reveal any morbid structure which could be converted into healthy tissue by a destructive agent.

A healthy mucous membrane in the nose is composed of, first, a layer of epithelial cells; second, the mucosa proper, containing blood-vessels, mucous glands, and nerves, bound together by white fibrous and yellow elastic connective tissue; and, third, the submucous connective tissue, which over the turbinated bones contains a large plexus of veins, the cavernous bodies, falsely called erectile structures.

In catarrhal inflammation of this membrane the changes which occur are: In the first or epithelial layer, no changes as a rule; in the second layer or mucosa there is an increase in the connective-tissue structure, some dilatation of blood-vessels, more especially in the veins, but *no change in the glandular elements.* It is in the third layer that we find the prominent changes, and these consist briefly in a very marked dilatation of the veins which compose the cavernous bodies, or turbinated bodies as they are often called, and a notable increase in the elements of the intervenous connective tissue. The morbid condition is essentially one of chronic hyperæmia and hypertrophy.

The use of any destructive agent as such to control and remedy this condition would seem somewhat irrational. The indications do not point to destructive methods. This action of a caustic would result in the destruction of the epithelial layer, and possibly penetrate to the mucosa proper, but rarely would it reach the submucous tissue, which is mainly the seat of the morbid conditions which require remedying.

In order that I may make clear what I regard as the true action of caustic application, I shall be compelled to allude briefly to some questions on which I have already written more fully in regard to the physiology of the nasal mucous membrane, and the pathology of what is called nasal catarrh. In what I say to-day it must be understood that I refer to chronic inflammation with moist secretions, hypertrophic rhinitis, and not to the so-called dry catarrh or atrophic rhinitis, which in its later stages gives rise to a fœtor or ozæna. As regards the term nasal catarrh, I have been quoted as saying there is no such disease. This I believe really true; there is no definite disease which can be described by the term, but a large number which are comprised under it. If I were asked to define the term nasal catarrh, I think I could do no better than by the expression "something the matter with the nose."

The nasal mucous membrane secretes just sufficient mucus to lubricate its surface and no more. This is true of all mucous membranes in the body; this is their function, and the economy demands nothing more of them. There are, however, poured out on the surface of the nasal lining membrane in health from twelve to sixteen ounces daily of serum, whose source is in the venous sinuses of the cavernous bodies; moreover, this is the sole and only rational function which these large venous bodies can perform. The object of this large serous transudation is to moisten the air which passes into the lungs, thereby so far saturating it with watery vapor that it may not injure the lower air-passages by robbing them of the scant supply of moisture provided by their limited secreting apparatus. This normal serous secretion is not perceived or appreciated in health, being rapidly vaporized by the to-and-fro current of respired air.

Now, in a diseased condition of the nasal membrane, the venous sinuses being dilated and the intervenous tissue being notably thickened, it is easy to see how this quiet and constant transudation of serum is much interfered with. Moreover, the swollen membrane so far encroaches upon the nasal passages that the free circulation of air is prevented. The result is that, while the serous exosmosis is diminished, even the smaller amount is not taken up by the air current, and therefore accumulates in the cavities. The mucous secretion becomes thicker and more viscid from the smaller amount of serum with which it is intermixed, and so makes its presence now felt as a source of annoyance and discomfort. I trust I make this point clear, as I regard it as of much importance. Sixteen ounces of serum, intermixed with a limited amount of healthy mucus, are secreted daily in the nose, and are absolutely unperceived while this organ is performing its proper function. Diminish the amount of serous exudation to six or eight ounces, and this, with an admixture of normal mucus, becomes viscid and tenacious, is not easily removed, and becomes a source of discomfort.

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* Read before the Medical Society of the State of New York, February 7, 1888.

If I am correct in this view, and it is the result of many years of rather close observation, then it is easy to understand how neither astringent nor disinfectant applications are indicated or efficacious.

Caustics are, however, of much value, and their action is such as to directly control the essential morbid conditions which require remedy. A caustic simply coagulates the albumin of the superficial layer of the membrane, or converts the soft elastic tissue into a hard, dense, inelastic slough, at the same time undergoing contraction.

Before the use of cocaine this action was of undoubted, but limited, benefit. Since the introduction of cocaine, however, the value of these agents have been greatly enhanced. In cocaine we have a drug which completely expels the blood from the membrane, and so contracts it down firmly upon the bone beneath, preparing it in such a way that what was formerly accomplished by the caustic application may now be increased many fold. Our procedure then would be, in cauterizing the nasal membrane, to first apply cocaine until the part is exsanguinated and contracted fully, and then to delicately destroy by caustic the elasticity of a small area over its most prominent part, and, as it were, button the membrane down in such a manner that it can not swell again. We expel the blood from the part and dam it out, as it were. We thus control the hyperæmia, and allow the distended blood-vessels to regain tone, affording their relaxed walls a sufficient period of rest in which to regain contractile vigor.

The prime element in acute inflammatory changes is vaso-motor paresis. It is a reasonable view that, in chronic inflammation, the muscles which control the caliber of the vessels play a prominent part by their weak and relaxed condition. By controlling blood-supply to the inflamed part, another and important end is accomplished, in that we thereby modify to an extent the nutrition of the membrane, and so diminish, by a retrograde process, the hypertrophy which has taken place, due originally, I think, without question, to this increased blood-supply.

In this manner we directly attack the essential morbid condition, and, as we all know, secure creditable results in our work. A very important aid to us, however, in doing this is an intelligent comprehension of just what we want to do, for there is a very great difference in diffusing a caustic application over a large surface in order to destroy a supposed fungous growth in the nose, or deftly applying it on a contracted membrane with the idea that what is to be desired is to pin this tissue down in such a way that its plethoric circulation shall be controlled, and the exaggerated nutritive processes be set at rest.

In this manner, again, we avoid what has been something of a reproach to us—viz., that we need not ask of our patients that they come every day, or every other day, to our offices for treatment. It has been my practice to see my patients but once each week, and even then I at times have found the intervals too short.

I need not say that I have seen the efficacy of this method of caustic treatment verified many times, and that an examination at the end of a week, or even longer, has shown the hyperæmia still completely controlled, and the previously swollen membrane held firmly down by the little button of cauterized tissue.

On the other hand, I have many times seen the membrane swell to its original state very soon after the caustic has been used, owing to lack of nicety and care in its use. The result in controlling symptoms, of course, then proves a failure. As to the immediate results of a single successful application I could write much, were more time at my disposal, as of colds in the head permanently arrested, of a headache immediately relieved, or of bronchial attacks and winter coughs controlled, demonstrating the correctness of the views given above, as well as the quick sympathy between the nasal chambers and the air-passages below.

As regards the special caustic to be preferred, I have but a word to add. Chemical agents differ in no essential manner from the potential cautery. The one as well as the other possesses simply a certain amount of destructive potency. We hear now and then of the modern treatment of hay fever and asthma, as well as nasal diseases, by electricity. Of course, electricity has nothing to do with the matter; it is used to heat a small platinum wire in such a manner as to give it a certain amount of destructive potency, and to do this there is required an elaborate, expensive, and cumbrous apparatus. A few small crystals of chromic acid possess the same destructive power, are much more simply managed, and can be applied with far greater nicety, and the success of treatment often depends on this nicety of application. I much prefer this to any other caustic. Its local action is such as to render it, in my mind, far preferable to any other.

This preference I had for some time entertained, when my attention was called to the following views of Dr. Squibb, published in the "Ephemeris" for July, 1883, which so closely coincide with my own experience that I quote them at length:

"It is, perhaps, the most important and most valuable of all the erosive caustics, for one simple and characteristic reason—namely, that it is self-limiting in its action to a degree that no other destructive caustic is. It is an active oxidizing agent, and destroys the tissues to which it is applied by oxidation. Thus far its action is similar to other caustics—such as nitric acid, for example. But every molecule of chromic acid which destroys a molecule of organic tissue is itself destroyed and rendered inert by being reduced to an insoluble and inert oxide of chromium, and this principle and degree of self-limitation is not obtained from any other caustic. Sulphuric acid is also a destructive caustic, but not in the same way or by the same reaction as chromic acid, and it is not self-limiting. Both the sulphuric acid itself and the products of decomposition by it are more continuously and injuriously irritant. It is, therefore, a more powerful caustic than chromic acid, and produces deeper, more prolonged, and more irritable sloughing. Hence it is that sulphuric acid is a painful caustic, while chromic acid is not. That is, both may produce severe pain, and possibly for a short time equally severe pain, but the self-limiting action of chromic acid carries its self-limiting effect to the pain also, so that both the action of destruction and pain also are comparatively soon over, and the vital processes go on to separate the slough at once, and with little secondary or after irritation."

It has been charged against the use of caustics that cicatrices are formed. I have never in a single instance seen such a result. Nor could this well be so when the acid is properly applied, as its action should be confined to the epithelial layer of the membrane, whereas cicatrization could only result from an injury to a tissue composed largely of connective tissue—viz., the mucosa, or the submucous layer. To one main question in this connection I will allude very briefly—viz., Does cauterization radically cure these disorders? Unquestionably I think it does, when hypertrophy and hyperæmia are the only morbid conditions to be treated. In those cases of moist "catarrh" which are the result of a deformity of the septum, or of glandular hypertrophy at the vault of the pharynx, other measures are demanded.

The use of a destructive agent to control an inflammatory process may seem somewhat paradoxical, yet in the present state of our therapeutical resources we possess no more efficient agent.

26 West Forty-sixth Street.

INTUBATION IN CHRONIC STENOSIS OF THE LARYNX,

*WITH A REPORT OF FIVE CASES.**

By JOSEPH O'DWYER, M.D.

Had intubation of the larynx proved a complete failure in the treatment of croup, I should still feel amply repaid for the time and expense consumed in developing it, for I believe that it offers the most rational and practical method yet devised for the dilatation of chronic stricture of the glottis.

I have records of five such cases treated by intubation, three of them by myself and two by other physicians.

Of the first case I will give only an abstract, as it has already been published in the "Medical Record" of June 5, 1886:

Case I.—This patient was a woman, forty years of age, who came under my treatment December 5, 1885. Twelve years previous to this time she had contracted syphilis, which manifested itself chiefly by ulcerations in the pharynx, and for the last two years had also involved the larynx, but without producing any serious interference with respiration until within two months. The immediate performance of tracheotomy had been recommended by a leading laryngologist a short time before I saw her. The soft palate was adherent to the posterior wall of the pharynx on both sides, and a small ulcer still existed on the left side. A cicatricial band encircled the left half of the larynx and crossed to the right over the posterior portion of the chink, leaving only a very small breathing space between it and the right cord. The epiglottis was also deformed on its posterior surface by cicatricial contraction.

On the date above given I attempted to insert the smallest tube I then had for adult cases, but failed after several attempts, and was obliged to fall back on the largest of the croup tubes, that intended for children from eight to twelve years of age, which I succeeded in passing by using a great deal of force. She could breathe through this small tube with perfect comfort in a state of rest, and with it obtained her first night's comfortable sleep in the recumbent posture in two months. Tubes of larger size were used in rapid succession as the smaller ones were coughed out, and she returned home at the end of eighteen days with ample breathing room in the larynx. During this time the tubes were inserted nine times and retained an aggregate of one hundred and seventy-three hours. She reported occasionally for observation, and while there was no return of the cicatricial band, which had disappeared apparently by ulceration, and there was ample breathing room in the chink of the glottis, there was a gradual return of the dyspnœa, due, undoubtedly, to subglottic obstruction. Almost from the beginning I was convinced that there was considerable thickening on the right side below the cords, from the fact that the lower extremity of the tube was deflected sharply to the patient's left as it passed below the rima, and also because the force required to overcome the resistance was greater than could be offered by the cicatricial tissue in the glottis.

After an interval of about two months and a half I was obliged to resort to dilatation again, and found it necessary to begin with the smallest tube and use almost as much force as on the first occasion, although there was very little recontraction in the glottis. This time the patient was under treatment twenty-seven days, as I used still larger tubes, which were inserted thirteen times and retained two hundred and four hours.

I was now thoroughly convinced that the only means of preventing a return of the stricture was continuing dilatation by the occasional introduction of a tube. I therefore began by using it once a week, leaving it in the larynx from twelve to twenty-four hours at a time and gradually increasing the interval until it amounted to six weeks, but I found that this was too long, and was obliged to reduce it to one month, and sometimes five weeks. I still continue to insert this hard-rubber tube, which is the largest I have used, once a month, and leave it in from two to three days.

It is now one year and nine months since I began the dilatation of this patient's larynx, and there is scarcely any doubt that it will be necessary to continue it during the rest of her life. I am therefore beginning to teach her to insert the tube herself, which I do not think will be very difficult, as she possesses an unusual amount of pluck.

If this patient omits her iodide, of which she was taking sixty grains daily when she came to me and which I increased to ninety, for any length of time, points of ulceration appear in the larynx and on the posterior wall of the pharynx. The metal tube always produced some ulceration where it exerted the most pressure, especially on the anterior surface of the arytenoids, but this has not occurred to any extent with the light vulcanite tube. I have used the latter several times in this case, and while the patient does not swallow nearly as well with it as with the metallic tube, she is convinced that it causes less irritation, and that expectoration of the tenacious mucus is much easier. Although swallowing of both solids and liquids was very imperfect, this patient found no difficulty in taking an ample supply of nourishment. Liquids were swallowed better while she was lying on the back.

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* Read before the Section in Laryngology of the Ninth International Mecal Congress.

Notwithstanding the free use of cocaine, very sharp pain was complained of just after the introduction of the tube, which usually required a hypodermic injection of morphine for its relief. Tolerance was soon established, and a repetition of the dose was seldom required unless the tube was allowed to remain in the larynx for about a week, when the pain would again become severe.

In order to render possible the introduction of the small tubes used in the early treatment of this case it was necessary to reduce the retaining swell to almost nothing, which rendered their rejection certain as soon as the stricture became somewhat relaxed. They were consequently often expelled in less than twelve hours.

To avoid the pain and irritation necessarily produced by the frequent forcing of a tube through the larynx, I would in another case, if reasonably certain that the stricture were confined to the chink of the glottis, produce sufficient divulsion under ether to admit a large or medium-sized tube that would be retained as long as desired—a week, a month, or longer, according to the pain and irritation excited. It would be a much more rapid and less painful method. In this case it would have accomplished nothing, as no amount of divulsion short of rupturing the cricoid cartilage could affect the subglottic stenosis.

I have here a set of ten laryngeal stricture-tubes made by Tiemann & Co., of New York. The retaining swell is left greater on the smaller sizes than it was on those used in the case just reported, because I believe the force required to pass the tubes was due in great measure to the fact that the subglottic thickening was confined principally to one side, which rendered the canal tortuous.

The larger of these tubes is constructed of hard rubber, the medium sizes of metal—brass, gold-plated—with vulcanite heads to diminish the weight, and the smaller of metal only. The heads of the latter are left comparatively small, so that they can also be used in acute stenosis of the larynx in the years immediately following puberty, for which no provision has been made in the set of croup instruments.

The largest of them, in which the transverse diameter of the head is seven eighths of an inch, can be used in any form of acute stenosis in the large adult male, and the medium sizes in the female and small adult male.

In the largest larynx that I have yet examined the antero-posterior diameter of the chink, which is the same as that of the trachea, measured only seven eighths of an inch, and the transverse five eighths.

The diameter of the subglottic division of the larynx varies from one eighth to three sixteenths of an inch less than that of the trachea.

CASE II.—Louise M., aged thirty-five, married, was sent to me in April, 1886, by Dr. J. J. Reid from the throat wards of Charity Hospital, where she had remained since the performance of tracheotomy two years before. For seven months of this time she was under the care of the late Dr. Elsberg, and came to me with the diagnosis of incurable bilateral paralysis of the abductor muscles of the cords. Electricity and other methods of treatment had been tried in vain, and her case was regarded as hopeless so far as the functions of the larynx were concerned.

The history that I obtained as to the beginning of her ailment, and which I do not consider reliable, is as follows: During one of her periodical sprees with a number of boon companions, who were trying to make as much noise as possible by singing or screaming, in a desperate effort to outdo the rest she suddenly lost her voice. Her throat swelled and she soon began to suffer from dyspnœa, and was ordered to a hospital by a physician who was called to attend her. She had no recollection of reaching the hospital or of the tracheotomy that followed, and I could form no estimate of the time intervening between the first symptoms and the operation; she placed it at a few days.

The introduction of a laryngeal tube, with the vocal bands lying in apposition and their abductor muscles incurably paralyzed, I regarded as useless, and did not contemplate it for a moment. My intention was first to remove the vocal cords, or a portion of them, and make a cylindrical opening where before there was none, and then insert a tube until the healing process was accomplished.

When I came to investigate the case I found there was not the least power to whisper. She was obliged to communicate her thoughts altogether in writing. I already knew from my experience with intubation in children that with a very small volume of air passing through the larynx the ability to whisper distinctly is retained.

I found, further, that no air could be driven through the larynx by stopping the tracheal cannula and directing the patient to make a forced expiration, and was led to the only conclusion that could be drawn from these facts—viz., that the larynx was completely occluded, or that, if any opening existed, it was a mere pin-hole.

In the mirror the vocal cords could be seen closely approximated but normal in appearance. No adhesions were visible, and during all attempts at phonation or inspiration the arytenoids remained motionless. I now interpreted the case differently. This patient had undoubted symptoms of syphilis when I first saw her, which soon disappeared under the influence of the iodide. I believed that the first trouble was an acute laryngitis aggravated by the constitutional disease, and attended with marked swelling of the mucous membrane and submucous tissues, which brought the under surfaces of the vocal cords in contact. This would be still further increased by the cessation of all attempts at abduction by the admission of air through the tracheal cannula, and all that was required to seal the opposing surfaces was a little ulceration followed by healing.

This view of the case rendered the prognosis much more favorable. All that appeared to be necessary was to break up the adhesions and insert a tube to prevent reunion.

For this purpose I had her removed to the New York Foundling Asylum, and on April 29, 1886, assisted by Dr. Dillon Brown, the resident physician, Dr. J. J. Reid, Dr. W. K. Simpson, Dr. J. J. Griffiths, and Dr. F. S. Sellew, I placed her under ether, and attempted to pass a small tube through the larynx, but failed after using a great deal of force. I then enlarged the external opening, and realized for the first time that the cannula had been inserted, not, as I supposed, in the trachea, but in the crico-thyreoid space. No opening could be felt by passing the finger upward in the wound, nor could any be made out in the chink of the glottis, which was easily reached by pushing the larynx up on the outside at the same time that the finger was inserted through the mouth. All the force that could be exerted in this manner made no impression on the adhesions. I therefore passed a uterine sound with proper curve, guided by the finger, and forced it down and out through the wound, working it backward and forward, then passed it in the same way from below upward, and again tried the finger in both directions, but failed as before. A pair of strong forceps was now introduced closed from below, opened widely, and withdrawn in this condition. This gave room to admit the tip of the index finger, and by using much force the adhesions suddenly gave way, allowing the finger to pass up into the pharynx.

I now inserted a tube two inches and a half in length, the longest I had at the time, but here encountered a difficulty which I had not anticipated. The lower end of the tube came out through the wound, and no means that I could devise would keep it in place. I was therefore obliged to reinsert the tracheal cannula until a tube three inches long could be made.

Nine days later it was necessary to etherize the patient again in order to break up the adhesions which had reformed before I could pass the long tube. While doing this an assistant drew forward the inferior angle of the wound with a blunt hook, and pressed the lower end of the tube backward as it passed the opening by means of a lead-pencil notched at the end to prevent it from slipping.

The increase of half an inch to the length of the tube removed the difficulty experienced with the shorter one. A cork was now placed in the external opening and retained by a tape passed through it and tied around the neck, which the patient could remove quickly if necessary.

To provide against the danger of the lower end of the tube still engaging in the wound and thus obstructing both openings, the string was left attached to it and was passed behind the ear.

The fact that this patient could again breathe through the natural passages and communicate her thoughts in a very distinct whisper did not surprise her nearly as much as the ability to expectorate through the mouth, which was a great source of pleasure and amusement to her.

The tube was coughed out on the second day, notwithstanding its weight of an ounce and three quarters. The patient choked immediately and was obliged to remove the cork and have the nurse reinsert the tracheal cannula. I replaced the tube in the larynx four hours later without difficulty, and a week later removed it to see if she could get any air at all through the larynx, but to all appearances not a particle entered, and the tracheal cannula again had to be used.

A laryngoscopic examination showed the vocal cords in the old position of close adduction. I was now forced to the conclusion that the original diagnosis of paralysis was correct, and that adhesion resulted from ulceration produced by the tracheal cannula, which subsequently healed under antisyphilitic treatment.

Ether was again administered May 20, 1886, for the purpose of removing a portion of the vocal cords, as originally intended. I enlarged the wound downward in order to make room to keep the cannula in position during the operation, and at the same time out of the way, and tamponed the trachea around it to prevent any blood gaining admission to the bronchi. The incision was then carried up to, but not interfering with, the thyreoid cartilage. On separating the edges of the wound with retractors I missed the cricoid cartilage, or at least the anterior part of it. From the first ring of the trachea to the thyreoid cartilage there was no support for the soft yielding tissues, and when the flaps were allowed to drop back into position the anterior and posterior walls approximated in the same manner as those of the œsophagus or vagina. I hesitated now about proceeding further with the operation, as I regarded the case as next to hopeless; but, believing that the cricoid cartilage might have been cut in the original operation, and only displaced by the cannula, which was of hard rubber and very large size, I decided to complete the operation by hooking a tenaculum into each cord, guided by the finger, and cutting on the outside of this with a blunt-pointed bistoury.

I found this much more difficult than I anticipated, for the cords, although not far above the external wound, were not visible. In doing this operation again, I would lay open the thyreoid cartilage, which would make it a very simple matter.

The wound was brought together with the exception of the opening for the tracheal cannula, in which a cork was placed as before, and the same tube was passed into the larynx. At the end of eight days I removed it and found that she could breathe for the first time through the larynx, with the external wound closed by adhesive plaster. A laryngoscopic examination showed that only a small portion of each cord had been removed, and from the seat of the incisions granulations were already springing which promised soon to supply the place of the tissue removed. I therefore reinserted the tube in the larynx one day and a half after its removal, during which time respiration was carried on comfortably through the natural passages.

More lateral pressure appeared to me to be the thing required to prevent the further growth of granulation tissue, and this could not be obtained with the ordinary oval tube, which was designed specially to avoid undue pressure on the vocal cords. I therefore had one made almost cylindrical in form and passed it into the larynx on June 15th, where I allowed it to remain until the 26th—eleven days. I then removed it, not because it was giving rise to pain or inconvenience in any way, but because my experience with the first case was against leaving the tube in the larynx continuously for much longer than a week. On laryngoscopic examination, more breathing room was found than at any previous time, but granulations were still present. During the following three days she continued to breathe comfortably through the larynx with moderate exercise, and could even ascend one flight of stairs without producing much dyspnœa.

On examining the external opening on June 29th, I noticed a marked sinking in of the tissues both above and below it, where the cartilaginous support was defective, and I anticipated some difficulty in replacing the tube. So great was the contraction in this short space of time that, on using a great deal of force, I failed to pass the tube beyond this point until a slight incision was made downward.

The almost certain recurrence of this difficulty, every time the tube was allowed to remain out for a few days, convinced me of the necessity of leaving it in for a much longer time.

I therefore sent her back to Charity Hospital with the tube in her larynx and told her to return in a month, when I would remove it, or sooner in case it gave rise to much pain or any interference with respiration occurred.

Dr. Reid, in whose service she was, reported from time to time that she was doing well, and at the end of the month reminded her that it was time to have the tube removed. She left the hospital, but did not report to me, and months passed without hearing anything from her. Knowing that she was much given to dissipation, I believed that in all probability she was dead; but she surprised me very much by coming to my office on May 3d last, looking and feeling remarkably well with the exception of a cold recently contracted, which gave rise to a good deal of cough. She was still wearing the tube, which had remained in the larynx ten months and four days.

Her reason for not returning sooner was that she felt comfortable and happy, and did not wish to run the risk of having to wear the outside tube again.

It required some force to remove the tube, which was black from coating of the sulphides and closely dotted over with coarse granules of calcareous matter. When these were scraped off the surface of the metal was left quite uneven, and the tube is consequently somewhat smaller now than it was originally. The thin gold plating had probably disappeared before the tube was in the larynx a month.

For a moment after removing it inspiration was seriously obstructed, and I was about to insert another tube, which I had ready, when the breathing became perfectly free. On using the mirror, I found that the obstruction was due to masses of granulation tissue growing from the sides of the larynx above the ventricular bands, which must have partially overlapped the head of the tube, and which were drawn together by the forced inspiration immediately following the removal of the tube. During quiet respiration this did not occur. A good view of the larynx could not be obtained, and if ulceration existed, which is more than probable, it was covered by the granulation tissue.

She complained for some days of a void in her throat, as if an important part of it were missing.

The granulations, which I believed at first would have to be removed in some manner, gradually decreased in size, and at the last examination, about July 1st, a better view of the larynx was obtained. A large cylindrical opening existed where the chink should be, and no trace of the vocal cords was visible. There was undoubted motion of the arytenoids during inspiration. In the seat of the external wound was a deep sulcus, extending down between the unapproximated edges of the cricoid cartilage. The cough was toneless, and the voice, as before, a distinct whisper.

I have not seen this patient since, but Dr. Reid informed me that she returned to Charity Hospital in the early part of last August, suffering from alcoholism, and left in about a week. He examined the larynx, and found the same condition as described above. The breathing was perfectly free.

Had I had the least suspicion that the larynx would tolerate a tube continuously for so long a time, I should not have interfered with the vocal cords, as the tube, if it did cause their destruction by ulceration, would, in all probability, have fixed them permanently in the abducted position. I felt that I was assuming a serious responsibility when I concluded to leave the tube in the larynx for even the space of one month.

These two cases afford a remarkable illustration of the difference in sensibility displayed by the larynx in different persons. One patient could not retain a gold-plated or finely polished vulcanite tube longer than a week at a time without its producing undue irritation, while the other practically wore a hollow file, and not a very fine one either, in her larynx for many months, and was happy in consequence.

I had previously noticed the same difference in children suffering from croup, and at first attributed it to the protection afforded to the living sensitive tissues by a greater or less deposit of pseudo-membrane, but was soon convinced that this was not the explanation.

CASE III.—Mrs. L., aged forty, the mother of eight children, in the early part of December, 1886, began to suffer from hoarseness and a feeling as though something loose existed in the upper part of the windpipe, which she could not get rid of by coughing. She consulted Dr. J. W. Lyman, who found bronchitis and albuminuria, and these, together with the hoarseness, were believed to be due to cold. Later the voice was lost, and dyspnœa developed, which became so urgent on the night of January 14, 1887, that everything was made ready for tracheotomy, when it occurred to Dr. H. Griswold, who was called in consultation, that it would be a good case for intubation. When I saw her, at 9 P. M., there was very little cyanosis, but the breathing was very laborious, almost noiseless. She was unable to assume the recumbent posture. Dr. Griswold had made a satisfactory laryngoscopic examination, and found nothing abnormal in or above the chink except hyperæmia, but below the cords he could see what appeared to be œdematous folds of the mucous membrane crowding in toward the center, and more marked on the left side. The diagnosis was therefore subglottic œdema. But the fact that she was also suffering from bronchitis and albuminuria rendered it doubtful as to whether the dyspnœa was not, in part at least, pulmonary. On listening to the chest, no air could be heard entering the lower posterior portion of the lungs, and a very marked up-and-down movement of the larynx could be detected by placing the fingers over it. The latter symptom alone was sufficient to locate the obstruction in the glottis.

I first attempted to insert a tube two and a half inches long, but, owing to the short curve on the introducer, it was necessary to detach it before the lower end of the tube had passed through the obstruction, and, the probe point being thus lost, the tube caught on the swollen tissues and was arrested. A three-inch tube which extended below the stricture before the obturator was removed passed without difficulty, and with complete relief to the dyspnœa. There were present Dr. J. W. Lyman, Dr. H. Griswold, Dr. G. G. Van Schaick, and Dr. Adolph Rupp.

On inquiring more closely into the history of this patient, it was found that she had contracted syphilis from her husband some years before, and since that time had had several miscarriages.

After the tube was inserted she refused to swallow anything either in the solid or fluid form, and was fed at first by the rectum, and later by the stomach-tube. The iodide was given mixed with the food in small doses, as the stomach would not tolerate large ones, and mercury by inunction.

The tube was removed in five days, but had to be replaced in twenty minutes, owing to the rapid return of the dyspnœa. It was again removed two days later, while Dr. George M. Lefferts, who was called in consultation, made a careful laryngoscopic examination, and reinserted in half an hour. Dr. Lefferts's diagnosis was subglottic laryngitis. It was removed for the third time on January 24th, ten days after first insertion. This time it was left out twenty-one hours, when the dyspnœa became so urgent that I was obliged to replace it, and Dr. Griswold removed it on February 4th, twenty-one days from first insertion. It produced no ulceration nor pain, but caused excessive coughing, which had to be moderated at night by opiates. A very large amount of tenacious mucus was secreted, which required considerable coughing to remove.

March 14th, or about six weeks after the tube was last removed, I was hastily summoned in the night by the husband, who said that his wife would in all probability be dead before I reached her. I found her deeply cyanosed and much worse than at any previous time. I was obliged to make three attempts before I succeeded in placing the tube in the larynx, and they had to be made very rapidly, as cutting off the small amount of air that was entering the lungs for even a short time would have produced *asphyxia*. I was without assistance on this occasion, and had heard nothing from the case for some time, but when I met Dr. Lyman the next day I learned that there was a new development. Her left arytenoid was very much swollen and ankylosed, and on its anterior surface and involving a considerable part of the posterior region of the larynx was a growth which overlapped the chink of the glottis. This explained the difficulty experienced in passing the tube, and also, in part at least, the dyspnœa. Another physician who examined this patient's larynx a short time previously regarded it as a perichondritis. The history of the case, the appearance and location of the *tumor*, and the absence of any swelling or tenderness on the outside, were, I think, sufficient to exclude this and to leave very little doubt that it was a *gumma*, which had developed while the patient was said to be taking large doses of the iodide and bichloride. The tube was removed in a week, and immediately replaced by a larger one of hard rubber, which was prepared in the following manner: Those portions of it which would come in contact with the diseased surfaces in the larynx were coated with gelatin, liquefied by heating, and dusted over while still moist with dry powdered alum, and as one layer dried another was applied until a sufficient thickness was obtained. Gelatin swells considerably as it absorbs moisture, and the dilating power of the tube thus treated can be temporarily increased to any extent with or without the astringent or other applications. This can be prolonged by covering the gelatin with a layer of collodion, which prevents the too rapid absorption of moisture.

This tube was removed for the last time on March 28th, having been in the larynx seven days. It gave rise to considerable pain and irritation, which were attributed principally to the alum. I have not seen this patient since, but have recently been informed that there is still some dyspnœa on exertion and very little voice, both probably due to remaining subglottic thickening, but I have no knowledge of the recent laryngoscopic appearances.

This patient, who was firmly convinced that she could not swallow anything during the first period of treatment, subsequently learned how to swallow a sufficient quantity of both liquid and solid nourishment and large doses of the iodide without much difficulty. But she could not swallow nearly so well with the hard rubber as with the heavy metal tube; the latter, as she expressed it, sank lower down than the light tube. She could not distinguish any difference in the weight, although one weighed an ounce and three quarters and the other only one hundred grains, nor any difference in the ability to expectorate, and the caliber of the hard-rubber tube was almost double that of the other. It will be remembered that the first patient expressed a decided preference for the light tube, which was the same one used in both cases, and principally because she expectorated better through it. Although my experience is yet very limited, I have some reason to believe that while deglutition will be more difficult with the hard-rubber tube, which necessarily stands higher in the larynx on account of its lightness, secretions will be more easily expelled, as they do not appear to adhere so firmly as to the metallic tube.

Case IV.—This patient was treated by Dr. J. J. Reid in his wards at Charity Hospital and briefly reported by him in the "Philadelphia Medical and Surgical Reporter" of May 14, 1887.

J. K., aged twenty-two years, entered hospital May 1, 1886. He stated that four years previously he had contracted a severe cold, accompanied by hoarseness, which had continued more or less ever since. He sought relief at various dispensaries, but, steadily growing worse, finally entered the hospital. At this time there were considerable emaciation, hoarseness, cough, and dyspnœa at night. He gave no direct history of syphilis, but there was necrosis of the hyoid bone, part of which had escaped by the mouth, leaving a discharging sinus on the inside. Ulceration existed around the base of the epiglottis and involving the left side of the larynx to the arytenoids, both of which were much swollen and partially ankylosed, as there was very little motion of the vocal cords. Notwithstanding the free use of the iodide, the dyspnœa increased, especially at night, until the question of surgical interference had to be considered. I saw the patient with Dr. Reid and advised against intubation, as I believed the tube would aggravate the existing ulceration. Dr. Reid thought differently and inserted a small tube on September 20, 1886, which was coughed out in twenty-one hours. Strange as it may seem, it did not give rise to much irritation, or at least the patient made no complaint. He was able to take nourishment well and slept comfortably without opiates, except a dose immediately after the insertion of the tube. The same day a larger tube was introduced, and expelled in twenty-four hours. A still larger one was then used, and retained only half an hour. As the dyspnœa was now much relieved, no tube was used for a week, when, on September 29th, a much larger size was introduced and retained for eighteen days, and then rejected while the patient was sitting up. There was a slight return of the dyspnœa on December 15, 1886, and the same tube was inserted for only twenty-four hours. He left the hospital soon after to resume work as a cigar-maker. He was seen the following June, six months after the final removal of the tube, and was then working at his trade and had had no return of the dyspnœa.

Case V.—This case was operated on by Dr. Dillon Brown, assisted by Dr. W. H. Wilmer and Dr. Howard Lilienthal. There were also present Dr. H. E. Sanderson, Dr. H. S. Stark, Dr. G. C. Rich, Dr. E. F. Walsh, and Dr. C. E. Giddings.

The patient was a German, aged thirty-nine years, who for some time had been subject to *severe* attacks of laryngitis accompanied by dyspnœa. On laryngoscopic examination, a subglottic neoplasm was discovered, for the removal of which a high tracheotomy was performed on December 24, 1886. The growth was found to be very vascular, and, on scraping it out with a curette, a piece of a lucifer match, three quarters of an inch long, was discovered imbedded in its center. The cannula was replaced for three days, then removed, and the wound allowed to heal. As it did so the dyspnœa increased until, on January 18, 1887, while the patient was almost asphyxiated and pulseless, Dr. A. G. Gerster reopened the trachea and inserted the cannula. Nine days later, when the patient had regained sufficient strength, Dr. Gerster laid open the thyreoid cartilage to seek and remove if possible the cause of the obstruction.

The notes furnished me merely state that the cannula was reinserted, but give no further particulars of the operation.

He continued to wear the cannula until March 25, 1887, when Dr. Brown inserted a tube in the larynx, under the influence of ether. Two previous attempts had been made without ether and failed, owing to the same difficulty that I experienced in my second case—viz., the lower end of the tube engaging in the external opening. He was of a very nervous, irritable temperament, and the tube gave rise to excessive irritation, which called for the frequent use of opiates.

Notwithstanding the fact that he was very sensitive in regard to his personal appearance and very anxious to get rid of the tracheal cannula, he frequently begged to have the tube removed from the larynx. The irritation was not so great after the first day or two, but it is safe to say that toleration was never established in this case.

The tube was removed in a week and there was no return of the dyspnœa, but as the one used was very small it was considered safer to produce further dilatation by a larger tube. This was introduced April 26th, but immediately rejected, and no further attempt was made and none was necessary. The patient was last seen August 12th, in good health and free from dyspnœa, and had a good voice. He wore the tracheal cannula three months, and was cured by wearing a tube in the larynx one week.

As yet I am unable to speak from my own experience in regard to the prognosis in chronic stenosis of the larynx. Permanent cures have been reported, particularly by Schroetter, of Vienna, but I have no knowledge as to the length of time, after final treatment, when such cases are reported as permanently cured, and this is the important point. I might report my second case now, more than four months after the removal of the tube, as cured, but I believe it would be premature to do so even at the end of a year.

No one would call a stricture of the urethra that required ten or more years for its development as permanently cured because it had not returned in one year after thorough dilatation or cutting.

The contraction of cicatricial tissue may be very slow, and as it requires only a small portion of the normal lumen of the air-passages for free respiration, a considerable degree of contraction must exist before manifesting itself in the form of dyspnœa.

Cicatricial tissue produced by the healing of deep tertiary ulcers, if situated in the subglottic division of the larynx, such as was present in my first case, will in all probability require occasional stretching throughout life. If, on the contrary, it is confined to the chink of the glottis, the prognosis will be better, as here we have the inspiratory abduction of the vocal cords twenty times a minute, which must antagonize to some extent the tendency to recontraction.

We know that cicatricial tissue in other parts of the body finally loses the power to contract by persistent and long-continued stretching, and if the first case reported could tolerate the tube continuously for several months instead of a week, the outlook would be better.

The third case was not, properly speaking, one of chronic stenosis, but a specific inflammatory infiltration which required only constitutional treatment for its cure, the temporary use of the tube being necessary to tide over the immediate danger of asphyxia, although it no doubt also hastened absorption by its pressure.

If constitutional treatment be neglected in a case of this kind, deep ulceration will follow, and the development of cicatricial stenosis is then only a question of time.

Syphilitic lesions of the larynx, in my experience, do not yield as readily to specific treatment as the manifestations of this disease in other parts, and therefore more perseverence is necessary.

In Dr. Reid's case, although of long standing, the ulceration was apparently confined to the supraglottic region and not very deep. The occasional use of mercury and the iodide extending over a long period would probably in this case insure a permanent cure. Without this it will be very likely to recur.

In Dr. Brown's case there was no cicatricial tissue, but simply inflammatory thickening produced by the presence of a foreign body. The removal of this still left more or less thickening, and, what was probably more important, partial ankylosis of the arytenoids from want of use. All that is necessary to effect a cure in such a case is to produce sufficient dilatation to admit air through the larynx, and thus excite contraction of the abductor muscles, or, in other words, to set the machinery in motion.

Thus far I have dealt almost exclusively with facts. In the concluding part of my paper, which treats of stricture of the trachea, I find it necessary to fall back on theories, as I have not yet treated a case of this kind. These theories are not visionary, but, on the contrary, are strongly supported, if not demonstrated, by the foregoing facts.

The oval laryngeal tubes are not suitable for stricture of the trachea, which retains the cylindrical form, and requires tubes to correspond. I had one of this kind made for an old lady, aged sixty-eight years, who was suffering from stricture of the trachea caused by a process from a large bronchocele surrounding it. I saw this patient with Dr. Edmund J. Palmer at the suggestion of Dr. Henry B. Sands, with a view to practicing intubation. The tumor was very large, especially in front, covering the whole of the trachea and the greatest part of the larynx. Tracheotomy did not offer much hope, as, in order to get into the trachea below the obstruction, a large mass of vascular tissue would have to be cut through, and none of the ordinary tracheal cannulas would be long enough to reach it. To open into the larynx above, where there was less of the growth, would still leave the stricture below. Dr. Sands, who was first called to consider the advisability of opening the trachea, did not give much encouragement, and would operate only in case of impending asphyxia.

Before I could procure the tube which I intended to use, the patient insisted on returning to her old home in the western part of the State, where she subsequently died.

That portion of the tumor which surrounded the trachea, by also pressing on the œsophagus, interfered very much with deglutition. Solids could scarcely be swallowed at all, and, even had we succeeded in relieving the dyspnœa, death from inanition was only a question of time, as it would have been impossible to pass a stomach-tube.

The difficulty of intubating in such a case would result from the small size of the stricture. I am as fully convinced as if I had tried it that it would have been impossible to pass a tube as large as the one I have shown without previous divulsion under ether. This I intended doing with the smallest of Schroetter's long vulcanite tubes.

Many years ago I heard the late Professor F. H. Hamilton relate his experience with an almost identical case. His patient was a clergyman far advanced in years, who for the greater part of his life had suffered from a large goître. When death by strangulation was only a question of a little time, Dr. Hamilton performed tracheotomy, but the insertion of the cannula gave no relief, and the patient died soon afterward. The autopsy showed that the trachea at the seat of the stricture was reduced to the size of a crow-quill. I have no recollection of further particulars, but the tube must have been inserted above the obstruction, and was, of course, many times too large to pass through, even if it had been long enough.

There is scarcely any doubt that, of all strictures, that of the trachea is the most unfavorable as regards permanent cure. It can unquestionably be dilated if not situated too near the bifurcation, but the power of the contracting tissue, whether on the inside or outside, which is sufficient to overcome the resistance offered by the almost bony rings of the adult trachea, will not be destroyed by temporary dilatation.

My second case of chronic stenosis of the larynx, who retained a tube in the larynx continuously for over ten months without its becoming obstructed, suggested another plan of treating stricture of the trachea. It consists of first accomplishing sufficient dilatation with tubes, such as I have already shown, of different sizes, and then passing a tube of proper length and having a shoulder just large enough or small enough to pass completely through the larynx and rest on the upper surface of the stricture. It would also have a retaining swell near the lower extremity to prevent it from being driven upward by coughing.

If the stricture be situated too low down to be reached through the larynx it would be necessary to lay open the trachea at the seat of obstruction and insert a tube of hour-glass shape, such as I have here, and close the wound over it.

I do not entertain the slightest doubt that such a tube can be worn for a life-time without danger of obstruction from secretions, because the expulsive power of the cough would not be impaired as it necessarily is when the tube occupies the larynx and prevents approximation of the vocal cords. Neither would there be anything to fear from excessive irritation, as the mucous membrane of the trachea is infinitely less sensitive than that of the larynx.

As it stands at present, without actual demonstration, I know of no impediment to the permanent wearing of a tube in the trachea save the deposit of calcareous matter, to which I have already alluded, and this was probably caused by electrical currents excited by the copper and zinc alloy of which the tube was composed. I have noticed a slight amount of this deposit on the gold-plated brass tubes when retained for only one week, but not the least trace of it on the vulcanite tube when worn for the same time.

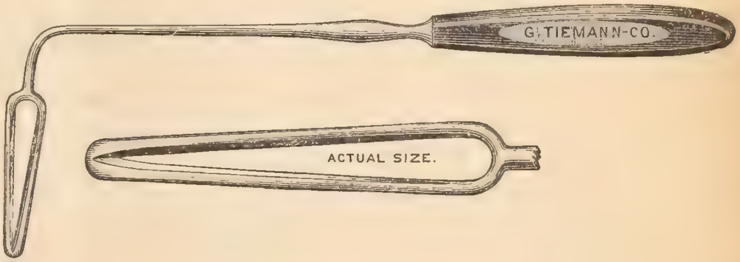
To avoid this objectionable feature, therefore, and at the same time insure durability, it will be necessary to have such tubes constructed of hard rubber burned on a frame-work of metal, or cast in pure gold.

A tube passed into a stricture in the trachea through the larynx can also be removed through the same channel by making the curved part of the extractor long enough.

I am not aware that any attempt has ever been made to exsect the strictured portion of the trachea, but it is quite probable that the great elasticity of this tube, which is necessary to permit of that elongation that takes place during the act of swallowing, would admit of the removal of at least half an inch without anything more than temporary interference with deglutition.

A child's trachea suspended with a slight weight attached gains three quarters of an inch in length, and the adult trachea, being much longer, should increase in proportion.

I have also devised a snare for the removal of laryngeal growths, particularly when situated in the subglottic region, where it is difficult to reach them with forceps in adults and impossible in children. For growths attached to the lateral aspects of the larynx the snare is passed far enough down to give room for the neoplasm to slip between the blades when it is pressed firmly against the side of the larynx and withdrawn. If the seat of attachment is unknown, both sides, and then the anterior and posterior portions of the glottis, can be curetted in succession.



This instrument will not seize any of the normal tissues when applied laterally, but in removing it, when used antero-posteriorly, it is necessary to protect the epiglottis and uvula with the finger. Two sizes of this snare are necessary, that shown in the cut being suitable for children. In young subjects it is guided into the larynx in the same manner as in practicing intubation. In adults it can be inserted with greater facility by the aid of the mirror.

MERCURIAL FUMIGATIONS

IN LARYNGEAL DIPHTHERIA OR DIPHTHERITIC CROUP.

By J. CORBIN, M. D., Brooklyn,
LATE SURGEON, U. S. NAVY.

In Volume VI, No. 6, August, 1881, of the "Proceedings of the Medical Society of the County of Kings," is printed a paper that I read before that society on the use of calomel in a particular form of diphtheria.

It is not denied, when the diphtheritic membrane extends from the fauces to the larynx, that we have a very serious complication to contend with, and one that is almost universally fatal. The mode of death is particularly distressing, as the patient usually dies from slow suffocation. As a last resort, the surgeon is called to perform tracheotomy, with little hope beyond that of affording the sufferer a more easy method of death. It is true that one occasionally recovers, but the percentage is very small. More recently, to afford a chance for recovery, intubation has been adopted. A physician of this city recently informed me that he had performed the operation in forty-five cases, and that five had resulted favorably. In an article recently published in this Journal I notice that the proportion was about thirty per cent., a remarkably good result in such a class of cases.

In the month of November, 1874, I was called to a child, three years of age, with diphtheria, in a family where an elder brother had just died of the same disease. There was nothing severe in this case or calculated to excite alarm until the fifth day of the disease, when occurred a hoarse and stridulous cough and complete loss of voice. I resolved to abandon the usual methods of treatment, expecting the usual fatal termination. A tent was constructed over a crib, under which the child was placed. By means of an alcohol lamp there was volatilized a drachm of the black oxide of mercury every two hours, the child being kept under the tent for the space of twenty minutes. I had the satisfaction of seeing this child recover. On the third day there was expectorated a piece of membrane nearly four inches in length. The aphonia lasted exactly twenty-one days.

Such is the brief history of the first case of diphtheria treated by mercurial fumigations. Frequent opportunities have presented themselves of using this treatment since, but it seemed that the recovery of this patient was simply an accident.

On the 25th of April, 1881, I was called to attend two children in one family, aged five and three years. Both cases seemed to be very mild, but on the third day of the disease there was aphonia, etc. I now determined to use the fumigations. Two fumigations had been given to the older child when the stenosis seemed so threatening that tracheotomy was performed, and it was almost resolved to perform the same operation on the younger child, but persistence in the fumigations rendered that step unnecessary, and both children recovered. The fumigations in the older child had already somewhat loosened the membrane, and I believe that the operation was uncalled for, but inexperience in the treatment led to my assent.

I used in these cases the mild chloride. In the fourth case I attended I volatilized nine drachms before the disease yielded. This was a child eight years of age, and the case was particularly obstinate. I have seen cases yield with the use of four drachms, and in one case I used one thousand grains in twenty-four hours. This was in one of my own children, and to-day she is well and in the enjoyment of perfect health. There have been no unpleasant effects produced in any case—no salivation or diarrhœa. This diphtheritic membrane is of low organization, and soon sloughs if the vital force upon which its formation depends can be destroyed. This I believe the volatilized calomel does, by being taken directly into the circulation, through the medium of the lungs. In no other way can it be introduced in sufficient quantities to control the disease.

To show the efficacy of the above-described plan of treatment, I here introduce the testimony of the following well-known physicians, who have sent me a record of their experience:

My dear Doctor: After the discussion and publication of your valuable paper on mercurial fumigations in the treatment of diphtheria, I adopted your method. I remember four cases, all of which were typically laryngeal and violent. Three of the cases recovered, and one was fatal. In all of these cases elaborate preparations for doing tracheotomy were made, but in none was it necessary to operate. The fatal case did not die from laryngeal obstruction, and the others are alive and well to-day. I had some misgivings in one case, for the father, who was compelled to breathe the fumes, became salivated, and it seemed inevitable that I should have mercurial toxæmia to combat in the child, but such was not the case. I found the children somewhat refractory at first, but it was usual for all to submit to the process without trouble, and in some the relief was so marked that they would call for it. I am reminded that your experience and publication were before the developments of modern bacteriology. At this time we can readily appreciate the reason for your splendid results. I will add that I have fully adopted the mercurial-fumigation method in all my laryngeal cases, and that I have not been obliged to resort to tracheotomy since. Before this I could not escape a single year without two or three operations, and in all my cases recovery was the exception. Still, if obstruction should continue after a thorough and persistent fumigation, there is nothing in the process which unfavorably prejudices the case for a tracheotomy. Where obstruction persists after thorough fumigation, it must inevitably occur low down, perhaps in the trachea, or in the bronchial tubes. Here the more ready entrance for the fumes of mercury through the tracheotomy-tube might arrest the diphtheritic process before the vital forces are fully spent. I am fully convinced that there is a fatal antagonism between mercury and the diphtheritic germ. More than this, my experience would seem to warrant the conclusion that the constitutional infection of diphtheria seems to beget a tolerance of the drug, wholly displaced by health. Calomel, judiciously used, is a great agent, but nowhere more beneficent than in the combat against diphtheria. Yours truly,

Herbert F. Williams.

450 Classon Avenue.

My dear Doctor: In reply to your note, regret to say I did not keep detailed record of cases, but gladly give you what data I have:

Annie H., aged four years, was taken with diphtheria November 4, 1884. Loss of voice on the 7th. During night of 8th had croupy cough. On the 9th decided dyspnœa. Ordered ʒ ss. hydrarg. chlor. mite burned under canopy every two hours. After second fumigation there was decided relief, but found it necessary to repeat it five or six times every twenty-four hours for five days, when respiration was normal.

This was a very tedious case, but finally recovered.

Sadie S., aged five years. First saw her December 7, 1884. Found patches on both tonsils. The next day there was decided aphonia, but no trouble with respiration until the 10th, when there was decided dyspnœa. Ordered ʒ j hydrarg. chlor. mit. burned under canopy every two hours till relieved. Second fumigation produced free expectoration and decided relief to respiration. Continued treatment three or four times per day for three days, when there was no obstruction to respiration. Child recovered.

Cliffie R., aged eight years. This was the most persistent case I ever managed.

Was called to see him during the night of January 24, 1887. Could only say he had an inflamed throat and high temperature; no membrane in sight. In the morning found slight patches on both tonsils and soft palate. The case appeared to do well until the 27th, when there was loss of voice.

On the 28th there was decided dyspnœa.

Ordered fumigations, ʒj hydrarg. chlor. mit., every two hours.

Did not get free expectoration or much relief to breathing until after third fumigation.

Found it necessary to continue treatment every two hours for most three days; then three or four times per day for a week, making in all almost ten days that it was necessary to use the mercurial bath.

In this case I had the assistance of a skilled nurse, and am satisfied directions were faithfully carried out. The convalescence was slow but perfect, though he did not recover his voice for many weeks. Each of these cases was given gr. $\frac{1}{60}$ hydrarg. chlor. corros. every two hours from my first visit to time of commencing fumigations. They also had stimulants and antipyretics. They were strongly marked cases of laryngeal diphtheria, and without the aid of the fumigation I should have earnestly urged tracheotomy.

Yours, W. F. Crutchley.

645 Kosciusko Street.

Dr. N. Tittemore, of this city, gives me a verbal report of seven cases which he has treated, six of which resulted favorably and one fatally. In the fatal case the treatment was only followed twenty hours, when it was abandoned by the family, and the child died. The youngest child was only eight months old, and this recovered.

I have treated up to the present time sixteen cases, and of that number three ended fatally—two of albuminuria two weeks after apparent recovery, and one from blood-poisoning. This was in a child fourteen years of age. The disease invaded the posterior nares, the cervical glands became swollen to a very large size, the pulse very weak and rapid, and finally diarrhœa set in, which ended the case. The stenosis was relieved, however, by the fumigations. We have here a record of thirty cases, twenty-five ending in recovery and five proving fatal, a mortality of about 16 per cent., an exceedingly favorable showing even if the five deaths had resulted from a failure of the method of treatment.

It is to be understood that this treatment is not a substitute for tracheotomy or intubation. It should be adopted as soon as the attending physician is satisfied that the larynx is invaded, and, since these symptoms are so evident and unmistakable, there can be no reasonable excuse for delay.

A few words as to details: I insist, when possible, that the patient be in a room where the sunlight has free entrance, that the temperature of the room shall not be lower than seventy-five degrees, and that the air shall be kept moist by the evaporation of water. During the time of the fumigations the patient receives no medicine whatever. At the beginning and end of a fumigation, milk-punch or wine is given. This I insist upon. A child's crib with barrel-hoops across the top, secured, and over these spread a flannel blanket, makes a suitable canopy or tent. In the case of a child eight or ten years of age I volatilize from forty grains to a drachm of the mild chloride. I keep the child under the canopy twenty minutes, when the blanket is removed. This is repeated every two or three hours during the first day. After this period I expect to find the cough loosened, giving directions to prolong the intervals of the fumigations, and at once to resort to them if the cough tightens. I have had cases where they had to be continued for over a week, but not more than two or three each day. The aphonia may not disappear for a week or two, but this need excite no alarm. Let the patient receive the most thorough alimentation. The fumes are not offensive and as a rule the child makes no resistance after the first fumigation. Generally the patient falls into a refreshing sleep, and sometimes he will point to the lamp, indicating that a fumigation is desired. The lamp had better be powerful enough to volatilize a drachm of calomel in one minute. The lamp I have constructed does this. By this means the air of the tent is not raised to too high a temperature for respiration.

Correspondence.

LETTER FROM VIENNA.

Sarcoma of the Trachea.—Excision of the Pylorus.—Nebulous Vision.—The Treatment of Syphilis with Injections of Calomel.—The Treatment of Tape-worm.—The late Professor von Langer.—The late Professor Wertheim.—An Increase in the Number of Privat-Docenten.—The Vacant Chair of Anatomy.

Vienna, *January 26, 1888.*

At a recent meeting of the Imperial Royal Society of Physicians of Vienna, Docent Dr. Zemann, Professor Kundrat's assistant, showed an interesting specimen of sarcoma of the trachea from a patient on whom Professor von Schrötter had operated in 1867, and in whom a relapse had occurred ten years afterward, for which he was again operated upon. Since that time he had complained of continued disturbances of respiration. On the 25th of October, 1887, he was again admitted into the hospital, and died there twenty-four hours afterward, with symptoms of bronchorrhœa. At the post-mortem examination, a broad, nodular tumor was found in the upper part of the trachea, which, on microscopical examination, proved to be a sarcoma. The case was interesting from the rarity of sarcoma of that region compared with fibroma. Professor von Schrötter took the opportunity of communicating some interesting features of the case during the patient's life. When he first saw the man, in 1867, he could not imagine how a person with such an excessive narrowing of the trachea could remain alive. The tumor was of enormous size, and filled the whole lumen of the trachea; it moved on inspiration and expiration, and its pedicle was behind and to the right. Only a very minute space was left for the passage of air, but nevertheless the man was able to perform somewhat difficult bodily labor. After local anæsthetization with chloroform and morphine, the tumor was removed with an instrument particularly prepared for the purpose; that is, the greater part of it was removed and the rest disappeared after the injection of a few drops of a solution of sesquichloride of iron, so that no trace of it could be detected. Two years later the patient returned with a relapse. The tumor was now as large as at first, and it was removed in the same way. In 1879 he was again admitted into the clinic, the growth having assumed a considerable size, but without being accompanied by the great disturbances of respiration previously observed. This was probably because the tumor had become more movable. It was highly vascular, so that during life it was larger than the specimen shown. The speaker alluded to another case of tracheal sarcoma in a girl.

Dr. Salzer, Professor Billroth's first assistant, recently showed before the same society two patients on whom Billroth had performed resection of the pylorus. One of them, a woman, had been admitted for a tumor of the abdomen which she had first noticed some months before, and she complained also of abdominal pain and of frequent vomiting. Having ascertained that there was a tumor extending from the symphysis pubis to the pit of the stomach, Professor Billroth performed laparotomy. The operation was difficult, owing to extensive and deep-seated adhesions, and during its progress the tumor was found to be adherent to the stomach, a great part of the wall of which had to be removed with the tumor, and resection of the pylorus was done at the same time. The tumor was a sarcoma originating from the muscular coat of the stomach. In the second case, resection of the pylorus had been performed successfully for carcinoma. It was necessary to remove also a part of the pancreas and portions of the gastro-colic ligament. In this instance the operator deviated from the common procedure, and stitched the pylorus to the greater curvature of the stomach.

Professor Fuchs has had an opportunity of observing an interesting case of nebulous vision (*Nebelsehen*) at his clinic in the general hospital. The patient had suffered seven years before from attacks of misty vision in the right eye, which disappeared and returned again after four years. He again improved, but afterward he complained of the same disturbances, which caused him great annoyance. Examination showed that the trouble was due to an increase of intra-ocular pressure, caused by two small tumors of the iris. Should they continue to grow, they would have to be looked upon as sarcomata. Another patient shown by Professor Fuchs stated that he had sustained an injury of the right eye by lime, and a small red point was subsequently observed on the cornea, where a little tumor afterward developed, situated partly on the cornea and partly on the sclera. In this case melanotic sarcoma was diagnosticated. The interesting features of the case were that pigmentations of the other iris were present also, that they were darker than those of the affected eye, and that the pupils were contracted. The patient could not say that there had not been congenital pigmentations of the right eye which might have given origin to the sarcoma.

At the last meeting of the society, Professor Neumann read a valuable paper on the treatment of syphilis with injections of calomel. On account of recent successes with the method, he had lately tried it again in thirty-six patients, using the following formula:

Calomel, Common salt,	each	1 part;
Distilled water		10 parts.

The injections were made in the region of the buttocks and in that of the trochanters. His experience was that many more injections were required to cause a disappearance of the manifestations than had been stated by many writers. The acute exanthemata disappeared more readily than the later lesions. The speaker discussed also the preventive treatment of syphilis, and remarked that, when he had begun with antisyphilitic treatment (mercury by inunction or iodide of potassium internally) immediately, he had succeeded in postponing the appearance of the exanthemata for weeks and months. When the calomel injections were used for this purpose, the secondary manifestations supervened after ten weeks instead of eight; this did not speak much in favor of the intense effect of the calomel. The speaker's statements were illustrated by patients and microscopical specimens.

Dr. K. Bettelheim, of Vienna, recommends the treatment of tape-worm with keratinized pills made according to the following formula:

Ethereal extract of male fern, Extract of pomegranate,	each	150 grains;
Powdered jalap		45 "

Mix and divide into seventy pills, to be keratinized.

In the case of adults he gives from fifteen to twenty pills on the fasting day, the day before that of the cure; and on the latter day he gives the rest of them. Exclusive of the day of fasting, when laxatives must be taken, the cure takes from seven to nine hours. When a laxative is required on the day of cure also, he orders an enema of *aqua laxativa viennensis.* Since he has used the keratinized pills he has observed vomiting during the treatment only once, and in that case the coating was imperfect; and it is only exceptionally that he has found the pills to be undigested.

Hofrath Charles von Langer, ordinary professor of anatomy in the Vienna faculty, died on the eighth of last month. He was born in German Bohemia in 1819. In 1844 he took his medical degree at Prague, and afterward became an assistant to Professor Hyrtl in Vienna, occupying that post until 1852. He then filled the chair of zoology at Budapest until 1874, when he was called to the Vienna chair made vacant by the resignation of Professor Hyrtl. Besides his attainments as a teacher, his literary merits were great. Among his noteworthy writings were those on the comparative anatomy of the blood-vessels, the joints, the growth of the hair, the anatomy and physiology of the skin, the mammary glands, etc. His text-book of descriptive and topographical anatomy has been much appreciated, having already reached a third edition. His writings on the cranial measurements of the great composers, Van Beethoven and Schubert, should also be mentioned. Among his distinctions was that of having been knighted by the Emperor.

Dr. Gustavus Wertheim, extraordinary professor of dermatology and syphilography and chief physician to the Rudolf-Spital, died on the 8th inst., at the age of sixty-six. He was a pupil of Hebra's, and wrote many valuable essays on diseases of the skin and syphilis.

The number of *Privat-Docenten* has been considerably increased recently.

A committee consisting of Professor Kundrat, the dean of the faculty, together with Professor Toldt, Professor Brücke, Professor Albert, Professor Billroth, and Professor Meynert, has been appointed to submit propositions relative to the election of an ordinary professor for the vacant second chair of anatomy.

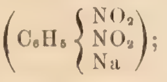
Hysterical Religion.—"Of course," says the "Lancet," "nothing disrespectful to the idea of a truly religious sentiment must be inferred from our use of the phrase *hysterical religion.* What we mean to designate by that term is religious fanaticism essentially emotional in its nature, and probably also in its origin. 'Jumping,' 'shaking,' and the like are distinctly morbid disturbances brought about by abandonment of the controlling will and judgment to the sensory impulses or the passions. Weak minds are supposed to be more prone than those which are normally robust to make this surrender of self-control, but, as a matter of fact, it may be, and doubtless is, not infrequently made by the strongest of intellectual organisms under the influence of such strong 'feeling' as may readily be produced by overtaxing the higher cerebral centers. The wondrously complex mental apparatus is easily thrown out of working order, and it is not in the least surprising to find the more delicately organized and sensitive machinery of mind work so disabled. It follows upon this consideration that the subjects of 'hysterical' disturbance in connection with religious thought and emotion are rather to be pitied than blamed for their vagaries. Nor are we prepared to say that, however much the existence of distinctly hysterical religions may be regretted, they ought to be put down by law At the same time it is clearly in the interests of public health and sanity that they should be adequately controlled, and we can not help thinking that the young girls who hop in 'glory holes' ought to be placed under some kind of supervision, if only that they may not be allowed to fall victims to the men 'full of devils' who are *not* turned out of the places of 'worship' where these decidedly undesirable orgies are held."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MARCH 10, 1888.

POISONOUS ANILINE DYES.

In the "Lyon médical" for January 15th there is a paper, by Dr. Carry, on the toxic effects of certain aniline dyes on those who handle tissues colored with them. His remarks are based upon five cases seen by him within two months. All but one of the patients were women, and they had been at work from a month to three months reeling yellow cotton which, during the operation of the machine, gave off clouds of irritating dust, causing frequent attacks of coughing. The symptoms in these five cases were similar enough to suggest a common cause, and were briefly these: progressive loss of appetite, soon followed by frequent vomiting of food, and then of glairy mucus and bile, when fasting and in the morning; colicky pains in the umbilical and hypogastric regions, not severe, but frequent, weakening by their persistence and accompanied by constipation; tongue of a dirty yellow and the border of the gums marked with a slaty blue line, also noticed in the worst cases on the inner surface of the cheeks and lips (in one case with ulceration of the gums); an almost constant, dull, heavy, supra-orbital and temporal headache, not severe but persistent, more marked in the morning, sometimes disappearing in the evening to return on waking; fugitive neuralgic pains in the epigastric and lumbar regions; marked analgesia of the skin of the hands and forearms, especially the right, which are brought more frequently in contact with the thread; no paralysis of the extensors and no dorsal swelling of the wrist. The patients were very anæmic and their faces a little puffy. The lower limbs especially were feeble, so that some of them were confined to the bed. Insomnia was habitual, and the debility and emaciation were progressive. There was no fever, and the pulse, though weak, was not accelerated. The cases were rebellious to treatment. After two months of abstinence from work, and the use of evacuants, the cephalalgia and insomnia had disappeared, the vomiting had ceased, and the appetite had been partially restored, but the patients were still far from well.

It is not surprising that Dr. Carry at first believed his patients to be suffering from lead poisoning, although the absence of "wrist-drop" was significant. Analyses of samples of the cotton by Professor Pouchot proved, however, that they contained not a trace of lead, but were colored with aniline dyes, with a salt of antimony as a mordant. Three samples were tested, one of which was found to be dyed with Martin's yellow, a dinitro-*a*-naphthalate of sodium  $\left(C_6H_5\left\{\begin{matrix}NO_2\\NO_2\\Na\end{matrix}\right.\right)$; a second with the yellow known commercially as Poirier N, analogous to the preceding; and a third with the amidoazobenzoldisulphonate of sodium $\left(C_6H_4\left<\begin{matrix}Na\\N=N\end{matrix}\right.\!\!-C_6H_3\left<\begin{matrix}NH_2\\SO_3H\end{matrix}\right.\right)$. The first and second gave off dust and produced toxic symptoms, while the third seemed to be harmless. Martin's yellow is thus shown to be a dangerous dye, and yet it is said to have been used for the past ten years to color articles of food. Dr. Carry says that it is put into butter, and who knows but it is used in wines? In fact, the third dye mentioned above, it is expressly stated, is very commonly used in coloring wines, although M. Lépine found that in quantities of from two to four grammes (half a drachm to a drachm) a day it caused non-diarrhœal colic in man.

The dangers connected with the use of such dyes in the preparation of textile fabrics might be mitigated if not abolished, so far as employees are concerned, by the use of respirators or the introduction of downward-exhaust ventilation in the shops. But what shall be said about the risk to those who wear the manufactured stuffs? These dyes are perhaps the most brilliant and splendid ever discovered, and, unluckily, the most hurtful ones are much the cheapest. It would seem to be the duty of public officials, however, to put a stop to the use of the poisonous ones.

THE PATHOGENY OF SUDDEN DEATH.

Dr. Key-Aberg, of Stockholm, contributes to the "Nordiskt medicinskt Arkiv" an investigation of the causes of sudden death, as this term is understood in forensic medicine and the Episcopal Litany, rather than from a strictly physiological or pathological point of view, and draws attention to the predominant importance of chronic endarteritis (Virchow's endarteritis chronica deformans) as a predisposing condition. From an analysis of 852 autopsies in cases of "natural" sudden death in persons over fourteen years of age, the author concludes that in 74·5 per cent. of all such cases chronic endarteritis leads to the fatal result by "paralysis of the heart, rupture of the heart, rupture of aneurysm of the aorta or of one of its extracranial branches, rupture of the aorta itself (including dissecting aneurysm), or intracranial hæmorrhage." As regards the relative frequency of these different terminations, cardiac paralysis is found in seventy-one per cent., cardiac rupture in two and four tenths per cent., aneurysmal rupture in eight and seven tenths per cent., and intracranial hæmorrhage in fifteen and three tenths per cent.; the mortality, especially from cardiac paralysis and aneurysmal rupture, being much greater in males than in females, and occurring at an earlier age. Neither social position nor occupation appears to exert any appreciable ætiological influence; but, as might be expected, the colder seasons of the year produce the greater number of deaths from chronic endarteritis. Particular stress is laid on sclerotic alteration of the coronary arteries as a cause of sudden cardiac paralysis, death being exclusively assignable to such degeneration in twenty-two out of thirty-three carefully studied autopsies. In thirteen of these instances minute microscopical examinations revealed results at variance with the opinion commonly entertained as to the frequency of fatty degeneration. In four of them there was absolutely no fatty change nor necrotic softening; of two cases of myomalacia, one alone presented some fatty degeneration in the immediate vicinity of the softened region; in two examples isolated trabeculæ and a single papillary muscle in the left ventricle showed coarsely granular fatty transformation; in three, finely granular metamorphosis was observed in the walls of the right ventricle, away from the trabeculæ and between the layers of interstitial fat, with but slight similar involvement of the left ventricle; in only two of the series was there a more extensive invasion of fatty degeneration, and, while in one of these the entire heart was involved, in the other the change corresponded with the distribution of the left coronary artery. Another surprising statement, in view of the somewhat dogmatic diagnoses of neurologists, is that, out of 635 cases, there was but one of embolism of the cerebral arteries.

Of the influence of atheromatous disease of the arteries in the causation of aneurysm and in shutting off proper nutrition from the tissues supplied by them pathologists have been long aware. The principal points of interest in Key-Aberg's observations are the demonstration that (as Gueneau de Mussy almost alone upheld) it is of frequent occurrence in comparatively early life, and the inference that it is limited to single parts of the arterial system oftener than is usually imagined.

MINOR PARAGRAPHS.

FREE TRADE IN ARTICLES FOR THE SICK.

The Georgia State Medical Society's petition asking Congress to place drugs, medical and surgical apparatus, and every article used in the diagnosis and treatment of disease on the free list has been sent to a number of medical societies with a view to their taking action recommending the legislation asked for. Our two large New York societies, the Academy of Medicine and the Medical Society of the County of New York, have passed resolutions in consonance with the petition. It is not to be doubted that the petition originated in a genuine desire to assist the sick and to facilitate physicians' acquisition of the necessary outfit, but it is to be doubted if Congress will take the action asked for, and it is certain that one unworthy argument has been used in this community in favor of the measure—namely, that it would give the profession a check on the manufacturing pharmacists and the instrument-makers—in other words, compel them to lower their prices. If this argument has been used among physicians in New York—and it has been—it is not impossible that it may find its way to Congressional ears. It is needless to say that a Congressman who allowed such a motive to influence his action on the question would be contributing to a piece of class legislation wholly uncalled for. Moreover, the medical profession is not yet a set of mendicants, and we do not think it is ground down by the greed of manufacturers. We have nothing to say in opposition to the petition itself, but we trust that the argument we have mentioned will not again be used to secure its indorsement.

THE WARNINGS OF HEART DISEASE IN CHILDREN.

We lately spoke of the insidious origin of cardiac disease in the young, and gave a summary of some recently published views of its causation. That the primary disease to which it owes its rise is often overlooked when a little more care might lead to its detection is probably the conviction of every experienced physician. In an article entitled "Certain Foods in Relation to Treatment," which appears in the January number of the "Brooklyn Medical Journal," Dr. John A. McCorkle puts the matter very pithily. It is not an infrequent occurrence, he remarks, for a child to be taken sick with fever, together perhaps with nausea, vomiting, and pain, which latter the child refers to the stomach. A hasty diagnosis is made of fever and pain due to gastric irritation, and it is fortunate if the treatment is of the expectant variety. The fever continues somewhat longer than the diagnosis would warrant, but after a time the child makes a fair recovery, and the sickness is soon forgotten. But, after the lapse of one, two, or three years, the doctor is called to the child again, and, having occasion to examine the chest, is surprised to find a cardiac murmur and wonders when the child had rheumatism.

A MEDICAL BURGLAR.

A humiliating account is given in the newspapers of the participation of a medical practitioner in the work of assaulting and robbing a miser living in the State of Maine. The practitioner in question seems to have taken an active part in planning the dastardly enterprise, which included the employment of professional burglars, and even to have prostituted his knowledge as a physician to its successful consummation, for he is said to have precipitated the attack at a time when he knew that the victim, who was his own patient, was sick and too feeble to make any serious resistance. If it is dishonorable in a physician to reveal a patient's secrets, surely it is inexpressibly detestable for him to make use of them in furtherance of felony.

THE LARYNGOLOGICAL SECTION OF THE ACADEMY OF MEDICINE.

The meeting of the Academy of Medicine's Section in Laryngology and Rhinology which was held on the evening of February 28th was one of exceeding interest and value. The programme, which we published before the date of the meeting, was well carried out, and the discussions were remarkably satisfactory, especially the one which followed the reading of the papers by Dr. Hooper and Dr. Blake, of Boston, relating to a subject of great importance. It was a graceful act on the part of our Boston visitors to contribute to the proceedings, and it is no more than just to recognize the wisdom of the chairman and the secretary of the section, Dr. Douglas and Dr. Vanderpoel, in arranging so satisfactory a programme. The section is one from which a great deal of good work may confidently be looked for.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 6, 1888:

DISEASES.	Week ending Feb. 28.		Week ending Mar. 6.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	3	8	4
Scarlet fever	155	28	151	24
Cerebro-spinal meningitis	7	4	8	5
Measles	62	2	65	2
Diphtheria	111	43	149	36
Small-pox	3	0	14	0

The Medical Department of the University of the City of New York held its forty-seventh annual commencement exercises on Tuesday evening of this week, at the Metropolitan Opera House. Diplomas were awarded to a hundred and sixty-three gentlemen. The hospital appointments were given to Dr. T. J. Dunn, Dr. S. J. White, and Dr. W. M. McArtney, and other prizes to Dr. W. G. Frey, Dr. L. R. Scudder, Dr. E. L. Fisk, Dr. K. L. De Sombre, Dr. E. J. Richardson, and Dr. E. P. Clark. Dr. Warren B. Chapin was the valedictorian.

The New York Hospital.—Dr. Lewis A. Stimson has been appointed one of the surgeons to the hospital.

The Gari Prize of the Royal Academy of Medicine and Surgery of Barcelona, for the best essay on the "Pathogenesis of Gonorrhœa," is to be awarded next year, according to the "Lancet." The prize amounts to about $300. The essays should treat of the clinical forms of the disease, especially of prolonged and repeated cases; complications and sequelæ; and preventive and curative treatment; and should be accompanied with illustrative specimens. They may be written in Spanish, French, or Italian, and must be unsigned but accompanied with a motto and a sealed envelope containing the author's name. They must be sent in to the Academy (Baños Nuevos, No. 9, Barcelona) before June 30, 1889.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 19 to March 3, 1888:*

Vollum, Edward P., Lieutenant-Colonel and Surgeon. Granted leave of absence for four months, with permission to go beyond sea, and to apply for an extension of two months. S. O. 41, A. G. O., February 20, 1888.

Gardner, E. F., Captain and Assistant Surgeon. Granted leave of absence for one month and twenty-one days. S. O. 41, A. G. O., February 20, 1888.

Appointment.

Shillock, Paul, to be Assistant Surgeon, with the rank of First Lieutenant. January 31, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 3, 1888:*

Heyl, T. C., Surgeon. Orders to the Receiving-ship St. Louis revoked.

White, C. H., Surgeon. Present duty continued to October 1, 1888.

Streets, T. H., Surgeon. Ordered to the Receiving-ship St. Louis.

Drennan, M. C., Surgeon. Ordered to the Receiving-ship Vermont.

Brush, G. R., Surgeon. Detached from the Receiving-ship Vermont and ordered to the Pensacola.

Means, V. C. B., Passed Assistant Surgeon. Detached from Naval Hospital, New York, and ordered to the Pensacola.

Hoehling, A. A., Medical Inspector. Detached from the Pensacola and to wait orders.

Harmon, G. E. H., Passed Assistant Surgeon. Detached from the Pensacola and to wait orders.

Edgar, J. M., Passed Assistant Surgeon. Detached from the Pensacola and to wait orders.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending March 3, 1888:*

Stoner, G. W., Surgeon. Detailed as chairman of board for physical examination of officers and candidates, Revenue-Marine Service. February 28, 1888.

Urquhart, F. M., Passed Assistant Surgeon. Detailed as recorder of board for physical examination of officers and candidates, Revenue-Marine Service. February 28, 1888.

Kalloch, P. C., Passed Assistant Surgeon. Relieved from duty at Pittsburgh, Pa.; ordered to Marine Hospital, San Francisco, Cal. March 2, 1888.

Carrington, P. M., Passed Assistant Surgeon. Relieved from duty at Marine Hospital, San Francisco, Cal.; ordered to assume charge of service at Pittsburgh, Pa. March 2, 1888.

Kinyoun, J. J., Assistant Surgeon. Granted leave of absence for twenty days. February 28, 1888.

Society Meetings for the Coming Week:

Monday, *March 12th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *March 13th:* New York Medical Union (private); Medical Societies of the Counties of Chemung) quarterly—Elmira), Rensselaer, and Ulster (quarterly), N. Y.; Newark, N. J., and Trenton, N. J. (private), Medical Associations.

Wednesday, *March 14th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

Thursday, *March 15th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *March 16th:* Chicago Gynæcological Society.

Saturday, *March 17th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

Lewis W. Oakley, M. D., of Elizabeth, N. J., died on Sunday, the 4th inst., at the age of sixty-one. He was a native of Kinderhook, N. Y., and was graduated from the College of Physicians and Surgeons, New York, in 1852. During the civil war he entered the army as surgeon of the first New Jersey brigade (familiarly known as the Kearney brigade), and was subsequently appointed to be a division surgeon in the Army of the Potomac. His death was due to apoplexy. Dr. Oakley will be remembered as having contributed materially to the prosperity and judicious management of the Alumni Association of the College of Physicians and Surgeons.

Thomas Delano Swift, M. D., died at his house in East Twenty-ninth Street, on Saturday, the 3d inst., in the thirty-fifth year of his age. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1879, and a member of the Pathological Society.

Jetson Willard Bentley, M. D., of Providence, R. I., died, after a long and tedious illness, on the 6th inst. He was born in Sandgate, Vt., fifty years ago, and graduated at the Medical Department of the University of the City of New York. He was a surgeon in the army during the war. For the last thirteen years he had practiced his profession in Providence. He was a genial and kind-hearted man and a skillful physician.

Edwin N. Chapman, M. D., of Brooklyn, died on Friday, the 2d inst., in the seventieth year of his age. The deceased was a graduate of the Jefferson Medical College, of Philadelphia, of the class of 1845. He was a member of the Medical Society of the County of Kings and of the New York Physicians' Mutual Aid Association.

Letters to the Editor.

A FOREIGN VISITOR'S FAREWELL TO AMERICA.

New York, *March 5, 1888.*

To the Editor of the New York Medical Journal:

Sir: After many weeks of sojourn in your beautiful country and before my departure for my home in Karlsbad, allow me to make use of a little space in your valuable paper. Thirst for knowledge brought me here, and the greatest appreciation accompanies me home. The confusing picture which is usually impressed upon the mind of a European by various writers and lecturers on this subject has been entirely eradicated by personal observation. I have seen a great country blessed with every gift of nature, a great people gifted with all manner of human virtues, wealth, law and order, security, and protection in every particular, and all this without a soldier. The culture of two worlds I have found amalgamated, and a vivacious, creative, and industrious people making gigantic strides toward future greatness with no foreign war nor internal envy threatening to disturb the continued work of culture or to impede the mighty and rapid development of this young nation. The advantage of youth is undeniably possessed by this country. As is well known, to youth belongs the future. The commerce and industry of the New World throw those of the Old deep into the shade, while science and art must still be developed.

Medical science, to which naturally I have paid most attention, finds worthy institutions in almost every direction, above all, the great commercial center of New York, where knowledge is dispersed not only in hospitals, clinics, colleges, and laboratories, but even in private meetings, where physicians consult and opinions are exchanged in demonstrating facts pertaining to daily experiences. In the quiet but intellectually active city of Philadelphia; in the distinguished city of Washington, where the administrative genius of Dr. Billings is arranging the greatest medical library of the world and the most interesting pathological museum; in fertile Baltimore, with its extraordinary Johns Hopkins Hospital; in that phœnix-like and rapidly developing city of Chicago; in that small but intelligent and friendly Milwaukee, with its Dr. Senn, one of the great modern operators; as well as in the Athens of America, Boston, there are meritorious scientific and practical men, though there may be a lack here and there in system and, after our idea, in certain discipline. I shall not fail to write in detail of the learned American medical teachers and physicians of the United States. As soon as my time permits, I intend to write all the various facts of my experiences while here. For the present I only desire to express my thanks for the extraordinary hospitality I have enjoyed in so many instances. It is a physical impossibility for me to give thanks individually for each kindness shown me; in fact, words are too inadequate to worthily express my thanks. With the hope that in Karlsbad an opportunity may present itself to me that I may balance accounts of cordiality with my beloved American friends, I greet them all with a fond farewell.

A. Kállay,

Resident Physician at Karlsbad, Member of the Medical Faculty of Vienna.

INSUFFICIENCY OF THE OCULAR MUSCLES.

9 West Thirty-fifth Street, *March 6, 1888.*

To the Editor of the New York Medical Journal:

Sir: In the last issue of the "New York Medical Journal" appears an article on "Hyperphoria" by Dr. J. Herbert Claiborne, Jr. In the course of the paper the author says "it appears that Dr. George T. Stevens was the first to describe the condition known as hyperphoria," and, farther on, "why, then, may not a latent insufficiency or overtension in one of these muscles (*i. e.*, the rectus superior or inferior) exist, as is known to be the case in the lateral straight muscles?" "and, if it exists, why may it also not cause symptoms of asthenopia?" The article from which these extracts have been made goes on to describe the tests which should be made and the treatment that may be applied in cases of insufficiency of the superior and inferior recti muscles. It is not my purpose to discuss the subject-matter of this paper. Here is an article calculated to afford the medical student much useful and interesting information. When the author, however, claims for the subject-matter of his discourse the distinction of its being a recent discovery in medical science he invites criticism, and a brief allusion to the history of this interesting chapter in ophthalmology may not be out of place. "Hyperphoria" is but another name for insufficiency of the vertical working muscles of the eyes. As long ago as August, 1869, von Graefe ("Klin. Monatsbl. f. Augenheilk.," vii. Jahrg., p. 268) described a case of vertical insufficiency treated by prisms. During the winter of 1869–1870 I had the opportunity, while acting as assistant surgeon at von Graefe's clinique in Berlin, to frequently see such cases, and at that early day an examination of the eyes of a patient who presented himself at the clinique with any symptoms of muscular insufficiency that did not contemplate the possible existence and detection of dynamical disturbance of the vertical muscles would certainly have been regarded as incomplete. Should the record of prescriptions filled by the Berlin opticians, Paetz and Flohr, be to-day examined, a not infrequent formula of a combination of spherical glasses with prisms, base up or down, would be found. In an article on "Progressive Myopia and its Operative Cure," which the writer of this brief letter contributed to the "New York Medical Journal" in June, 1873, this same subject was discussed, and a case was related where this same hyperphoria (so called) was corrected by means of a prism of 4° (base downward). I should not venture to trespass so far upon the patience of your readers had not this astonishing claim for priority in investigation in this important chapter of ocular medicine been recently so urgently made. I again repeat what I have elsewhere said, that the operative treatment and that with prisms of the vertical as well as the lateral working muscles has been the common property of all competent ophthalmic surgeons here and abroad for at least twenty years.

Richard H. Derby.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of February 22, 1888.

Dr. W. W. Keen in the Chair.

Apex Expansion versus Pure Air in Pulmonary Consumption.—Dr. Thomas J. Mays read a paper on this subject.

Next to the tubercle bacillus, he said, impure air stood most prominent among the many agencies which had been assigned as the causes of pulmonary consumption. Innumerable plans and methods had been devised and proposed for improving the ventilation of dwellings, hospitals, and workshops; volumes upon volumes had been written on the ill effects of breathing vitiated air; and the immaculate freshness of the country and mountain air had come to be universally regarded as a certain guarantee against pulmonary consumption. These, like many other popular notions, contained a germ of truth, but actually were delusive, inasmuch as they exaggerated the effects of a small evil, and afforded a false sense of security against the real source of danger in the production of this disease. This he would endeavor to show.

At the very outset he desired it to be well understood that he did not in the least underrate the value of fresh, wholesome air in the prevention and treatment of pulmonary consumption, and, while it was probably true that, on the whole, country people enjoyed greater immunity from this disease than city people—though this was not proved, on account of a lack of adequate statistics—yet he was convinced that the purity of the atmosphere played a very small part in bringing about this probable result. To make a homely hypothetical proposition, he would state that, if two individuals who respired the same quantity of air, and who were equally well off so far as heredity, food, clothing, warmth, comfort, etc., were concerned, were both enjoined to maintain a sedentary and a stooped position of their bodies for an unlimited period, one in a house and the other outside in the open air, there was no reason for believing that the one inside would fall a victim to this disease sooner than the one on the outside. If the disease was the result of breathing a vitiated and impure atmosphere, how could the fact be accounted for that the inhabitants of Iceland, Greenland, Lapland, and other cold countries of the north, who lived in dwellings notoriously wanting in ventilation, were practically exempt? Of the Icelanders, Mr. Warnford Lock, who was very familiar with these people and who spoke their language, had said that their life was one long exposure to the elements, and that during the night they lived in dwellings devoid of ventilation, which, if not buried beneath the earth, were built of turf and often became grass-grown; also that a very bad feature was the excessive stuffiness of the common living and sleeping room, where, owing to the absence of fires, the greatest possible crowding and plugging were necessary in order to maintain a tolerable degree of warmth. And yet Dr. Cullimore, from whose work the quotation was taken, had said that consumption in Iceland was never indigenous, but was always, when it did occur, imported from abroad and but seldom extended to the second native generation.

On the other hand, it might be stated that the people of the tropical regions of the globe, who enjoyed an uninterrupted reveling in pure, fresh air both night and day, winter and summer, were by no means free from pulmonary consumption. The only difference, so far as the physical life of these two classes of people was concerned, was that the warm climate, which produced such a luxurious atmosphere, also created a tendency to physiological sluggishness and an indisposition toward physical exertion, while the people of the cold and rigorous north were compelled to maintain the warmth and vitality of their bodies in great part, during the day, by physical exercise, of which their occupations of hunting, fishing, herding, etc., gave them a full share. It was also well known that miners and laborers employed in coal-mines, who continually respired an atmosphere which was not only loaded with impurities, but damp and musty, suffered but very little from this disease. One fact which lent color to the belief that pure air was such an essential element in limiting the ravages of consumption was that those who occupied elevated or mountainous regions were less liable to the disease than those who lived near the sea-level. Thus, Fuchs had shown from extensive data that at Marseilles, on the seaboard, the mortality from this disease was 25 per cent.; at Oldenburg, 80 feet above the level of the sea, it was 30 per cent.; at Hamburg, 48 feet above the sea, it was 23 per cent.; while at Eschevege, 496 feet above the sea-level, it was only 12 per cent.; and at Brotterode, 1,800 feet above the sea, it was but 0·9 per cent. Carrying this line of observation further, it appeared very probable that consumption was almost unknown among any native people who lived more than 6,000 feet above the level of the sea.

What concerned us here chiefly was the reason why mountain climates were, as a rule, so free from pulmonary consumption. Was it because the atmosphere was pure and free from septic germs? This was hardly possible, for, if it were true that the aseptic condition of the air played any very prominent part, why should the Icelanders, who nightly reeked in a most filthy atmosphere, or the dwellers along the Nile, who, according to Mr. B. Phillips, lived in huts where the pure air had neither ingress nor egress, except through a small hole near the ground, or the coal-miners, who continuously breathed a foul and poisonous atmosphere, all be comparatively free from this disease? Was it due to the general absence of humidity? He thought not, for Bogotá, the capital of the United States of Colombia, located on the Andes, near the equator, and at an elevation of over 9,000 feet, was said to be entirely exempt from the disease, although dampness prevailed to quite a large extent. There was much reason for believing that it was principally, if not entirely, on account of the attenuated condition of the atmosphere, and he would, therefore, at once proceed to consider the physiological influence of great altitudes on the human body.

It had been estimated by Dr. Denison that at an elevation of 6,000 feet the surface of the body was relieved of nearly 7,000 pounds pressure. When such an enormous weight was lifted from the body it was quite evident that its interior must also be decidedly affected—the pulse was accelerated from fifteen to twenty beats a minute; the respiration was quickened from ten to fifteen breaths a minute; evaporation from the skin and lungs was increased, and the amount of urine was diminished. These were some of the immediate effects. Protracted residence in such a high region enlarged the chest capacity. The Quichua Indians, who dwelt on the elevated table-lands of Peru, had enormous chests, containing capacious lungs with large air-cells. The Mexican Indians possessed chests which were out of proportion to the size of the individual. Dr. Denison had said that children born in the Rocky Mountains had chests of unusually large capacity, and M. Jaccoud had stated that at St. Moritz the respirations were not only more frequent, but fuller. The reason why the number of respirations increased while a person was ascending a great elevation became clear when we took into consideration the fact that at the sea-level a cubic foot of dry air contained about 130 grains of oxygen, while at an elevation of 6,000 feet it contained only about 106 grains—nearly 25 per cent. less than a person was accustomed to breathe at or near the seaboard—therefore, in order to supply the wonted amount of oxygen to the body, the respirations must increase either in number or in extent.

From all accounts it was very probable that respiration became accelerated only during the early period of exposure to such an attenuated atmosphere, and that subsequently this function became slow again because the air penetrated deeper and more completely into lung tissue but little called into play before.

That man did not suffer under such a deprivation of oxygen was evident from what we knew to be true of his lung capacity under ordinary conditions of life. Mosso had recently proved experimentally that man possessed a lung capacity nearly one fourth larger than the actual necessities of life at the sea level demanded; hence by employing his whole lung capacity he could extract a sufficient amount of oxygen from this attenuated atmosphere without difficulty. And herein lay the secret of why so many consumptives, and others with weak lungs, derived such great benefit when they resorted to a mountain climate. It might be trite, but it was nevertheless true, that all consumption practically began at the lung apices, because those parts were habitually inactive. They were inactive because, in the first place, the bronchial tubes were so arranged that they conducted the air with greater facility to the base than to the apex of a lung, and, in the second place, because the lung was larger than necessary; hence the base, which was filled most readily, was filled first, and the apex, if at all, toward the end of inspiration. The apices, therefore, became the superfluous parts of the respiratory organs. It was quite different, however, when the body was immersed in a highly attenuated atmosphere. Every available space in the chest was now brought into requisition to furnish the needed amount of oxygen, the apices were called out of their lethargic state, the alveoli were inflated, if the infiltrated areas were not dispersed the surrounding alveoli were kept permeable, and so the disease was, at least, limited and called into abeyance. This statement had been corroborated by those who had had large experience in the climatic treatment of pulmonary consumption. Thus, Ruedi had reported that, of 600 consumptives under his care at Davos, expansion of the thorax took place in no fewer than 584. Dr. Denison had said that the increased circumference of the chests of consumptives after undergoing the great-altitude treatment had been shown in many of Weber's cases, as well as in his own. Dr. Lindsay had stated that Davos did not cure consumption by its sunshine, or the purity and dryness of its air (although these conditions undoubtedly co-operated in the beneficial effect), but mainly by the rarefaction of its air, which stimulated respiratory activity, promoted healthy expansion and soundness of tissue in the lungs, and hence aided them to resist the spread of morbid deposits.

The fact was of still greater interest that those who followed active employments were less liable to this disease than those who pursued sedentary and quiet occupations. Thus, M. Lombard had found that in Paris, Geneva, Vienna, and Hamburg there were more persons leading a sedentary life afflicted with phthisis than of those leading an active life, in the proportion of 141 to 89. In the Brompton Hospital the relative liability had been found to be 63 per cent. of indoor males to 30 per cent. of outdoor, and all the consumptive females had followed indoor occupations. Dr. Guy had found, in the close workshops of a printing establishment, that the compositors, whose employment was sedentary, fell victims to phthisis in the proportion of 44 per cent. to 31·5 per cent. of the pressmen, who, although breathing the same air and in every other respect subject to the same habits of life, differed only in the active bodily exercise which the press imposed on them; and among the same class of operatives the deaths from the same cause did not exceed 25 per cent. in those who used exercise in the open air.

There could be no doubt, too, that those of our Indians who were still allowed to obey their roaming instincts of hunting and fishing, or to follow their vocation of farming, which a number had done, owed their immunity from this disease, which we knew they possessed, in great part, if not entirely, to the physical exercise which they obtained in this manner; while those who were subjected to the idle and improvident reservation life died rapidly from it, principally because they were deprived of their wonted exercise. This had a direct bearing on the main point at issue. Some of the former class of Indians, like the Pimas, for example, who might be called wild, although they were agricultural in their habits, were living in half-underground huts with very little or no ventilation; yet, from all accounts, consumption was an exceedingly rare disease among them.

Thus far it had been seen that, on the whole, those who occupied elevated habitations, as well as those who followed active exercise, were more exempt from the disease than those who lived near the sea-level or those who lived a life of quietude. In connection with this he would consider the influence of physical exercise on the lungs, and endeavor to ascertain how it afforded protection against consumption. During physical exercise more oxygen was consumed by the muscles, and more blood and air circulated through the lungs, than during rest. Just how much more air entered the lungs during activity than during rest could easily be estimated when it was known that during inactivity a man breathed 480 cubic inches of air a minute, and while walking at the rate of four miles an hour, or while tramping a treadmill, he breathed 2,400 cubic inches, and if he walked at the rate of six miles an hour he took in 3,260 cubic inches of air a minute. The difference between 480 and 2,400 cubic inches of air-capacity showed that during the exercise of walking, even at the rate of four miles an hour, five times as much lung surface was thrown into action than during rest, which proved very conclusively that bodily activity possessed a marked influence in determining the degree of lung expansion, and that under such conditions regions of lung would be called into service which were never fully reached by air during bodily rest. This was in entire accord with what practically existed. Thus, Darwin had said that the lungs in improved breeds of cattle, which naturally took little exercise and were domiciled much of the time, were found to be considerably reduced in size when compared with those possessed by animals having perfect liberty, and Waldenburg had stated that the vital lung capacity was smallest in persons who led sedentary lives, such as professional men, students, clerks, etc., and greatest in those who followed active outdoor occupations, such as sailors, recruits, etc. Chassagne and Dally, in their joint work on the "Influence of Gymnastics on the Development of Man," had reported that at the Military School of Gymnastics of Joinville-le-Pont, out of four hundred and one individuals subjected to gymnastic exercises for five months, three hundred and seven, or seventy-six per cent., had shown an increase of an average of 2·5 ctm. in the mammary circumference of the thorax. According to Dr. Abel, seventy-five per cent. of those who practiced gymnastics in Germany experienced an increase in the measurements of the chest. There could be no doubt that the principal reason why consumption increased with the advent of civilization was that everything in civilized life tended to produce physical inertia in our bodies. Walking was replaced by riding in carriages and in cars; manual labor was in great part done away with by machinery; active outdoor labor was supplanted by quiet indoor occupations—in fact, everything which tended to produce physical activity was exchanged for a life of ease and indolence. The American Indian, as had already been stated, was known to be comparatively free from the disease in his wild state, but as soon as he acquired the habits and customs of civilized life he became its victim.

Converging the two lines of reasoning thus far developed, it appeared that the immunity from consumption which was established by residing in a mountain climate and by practicing physical exercise was chiefly brought about in the same manner—viz., by increasing the capacity of the chest. And from a practical point of view it was of some moment to know whether the former had more weight in bringing about such restoration than the latter—or, in other words, whether those who lived at great altitudes continued to enjoy this exemption if they refrained from active physical exercise and took up a sedentary occupation in such regions. From recent inquiry into this subject the author was inclined to believe, at least so far as the Rocky Mountain climate was concerned, that, as soon as outdoor pursuits were exchanged for sedentary indoor occupations, consumption increased in frequency. It was, therefore, quite certain that physiological exercise played a more important part in the problem of the prevention and cure of consumption than a residence in an elevated or mountain climate, however valuable the latter might be. We had, moreover, good reason for believing that the immunity which was established by means of physical exercise was more permanent than that which was secured by residing in a mountain climate, for it was a common observation that consumptives flourished at great altitudes only so long as they remained; a protracted stay at the sea-level was always regarded as perilous. Such consequences were in perfect harmony with what one would be led to apprehend from a knowledge of the physiological factors involved in the restoration of the patient. These factors were entirely local, and their influence did not extend very far beyond their immediate dominion. This objection did not hold good in regard to physical exercise. One thing might be said, however, in favor of a mountain climate which was not true of physical exercise—viz., it produced its beneficial results without conscious effort on the part of the individual; therefore, when the remedy was viewed from a standpoint of ease and comfort, and not from one of permanence, the mountain climate was to be preferred. In discussing the influence of mountain air it must not be overlooked that, on account of its rarefaction, it increased the circulatory and cellular activity of the body, and in this way undoubtedly aided the process of nutrition; yet even this influence could not be denied to physical exercise, although it was brought about in a more direct and positive manner.

While increased chest capacity was, therefore, the great desideratum in preventing and treating consumption, there was the strongest evidence for believing that it was not so much a question of developing the base of the lungs as of expanding the apices. This was well shown by the fact that the civilized female, although she had on the whole a much smaller chest capacity than the male, yet, owing to her increased costal expansion, which had been cultivated by the protracted influence of tight lacing, she was less liable to pulmonary consumption than the male.

It now remained to be shown how the effects of physical exercise could be obtained without resorting to a mountainous climate. Reference had already been made to the fact that muscular effort increased respiratory motion, and in taking up the question of pulmonary gymnastics it was not the author's purpose to discuss those exercises only which had a direct influence on the chest capacity, but also those which, through the body, had an indirect influence on the pulmonary organs. In all exercises it was very important that none should be carried to the extent of decided fatigue; and that, whenever possible, the body and head should be kept erect, the shoulders thrown back, and the lungs thoroughly filled with each breath; that breathing should take place only through the nose; and that sufficient food should be taken during the intervals. The power of walking was common to most people, and its influence on the lungs, as had been seen, was very marked. It was regarded as of great service even by those who exclusively advocated the utility of great-altitude treatment. Dr. Brehmer, of Görbersdorf, according to Schreiber, had been the first to prescribe, for consumptives, walking up a gradual ascent. A semi-daily walk of half an hour or an hour, either on the level or on a slight upward grade, was of immense advantage to the invalid. Running, dancing, skipping rope (especially when the rope was swung backward), bowling, etc., were to be highly recommended. Whatever the mode of exercise, it must be performed under as little compulsion as possible. One reason why the above-named exercises were so conducive to health was the fact that the excitement which they induced was so attractive that the consciousness of muscular effort was lost.

Among the many indoor exercises, the following movements were very valuable: The arms, being used as levers, were swung backward as far as possible on a level with the shoulders during each inspiration, and brought together in front on the same level during each expiration; or the hands were brought together above the head while inspiring, and gradually brought down alongside the body while expiring. When a deep inspiration was taken in accordance with either plan and held until the arms were gradually moved forward or downward, or even longer, the process of chest expansion was materially enhanced. Another very effective exercise was to take a deep inspiration, and, during expiration only, the patient was to count as long as possible in a loud voice. A man with a good chest capacity could count up to sixty or seventy, while in a woman with ordinary lungs this power was somewhat reduced. Practice of this sort would gradually develop the chest, and the increased ability to count was a measure of the improvement going on within the thorax. Many of these movements might have their effects greatly enhanced by the use of dumb-bells, chest weights, etc., which were made especially for the purpose.

The breathing of compressed and rarefied air was attracting wide attention at the present time in connection with pulmonary consumption, and constituted another most useful method whereby the chest capacity could be decidedly improved. Nearly four years ago Dr. Solis-Cohen, the honored president of our society, had advocated the substitution of compressed and rarefied air for a change of climate, in a paper read before the American Climatological Association. In that paper he had said that in many cases fully as much good could be secured by this treatment as by change of climate, and in a few much more, though in the vast majority of cases in which change of climate was advisable it was but a poor substitute. There could be no doubt that compressed and rarefied air was inadequate when used alone in many cases, but, when it was combined with pulmonary gymnastics and other judicious treatment, it was not sure that the results were inferior to those derived from climatic treatment. Recent experience had shown that, when consumptives who had spent one or two winters on the Rocky Mountains or on the Pacific slope without benefit were subjected to the use of compressed and rarefied air in association with other pulmonary exercises, such as had been described, their improvement became marked and decided. On the whole, the author's experience with the air treatment, combined with pulmonary gymnastics, had been very favorable, and he thought that this was in consonance with the observations of others. Thus, the late Professor Flint, in his work on "Phthisis," had said that it did not appear, from the analysis of his cases, that changes of climate had in a marked degree a beneficial influence as compared with the hygienic measures available at home.

The author believed, however, that, as a rule, these measures were applied too infrequently to be of the greatest service; and therefore he insisted that the pulmonary gymnastics be repeated every hour and a half during the day—the first thing in the morning and the last thing at night—and for from fifteen to twenty minutes at each time; and that the air inhalations be given at first twice, and in the course of two or three weeks gradually increased to four or five times, a day, and even oftener. It was very true that this method of treatment involved more labor and perseverance on the part of the patient than was required in a high mountain climate; but it was a question whether the patient was not more than repaid by the consciousness that a separation from friends was unnecessary, that the heavy expense, the dangers, and discomforts incidental to travel were avoided, and, above all, that the improvement which might take place would be persistent and practically unaffected by a change of residence.

After reviewing the whole subject, the author had been driven to the conclusion that the line of immunity from consumption, which, in the early history of our country, had been located at the Atlantic seaboard, and which had gradually receded westward with the tide of civilization, until at present it had reached Colorado, would not stop until it touched the shores of the Pacific; that the question of curing the disease did not depend on the purity or freshness of the air, or upon the number of bacilli which the atmosphere might contain, or upon the amount of oxygen which might be introduced into the body—for these were all secondary considerations; but it was simply a mechanical question—a question as to the best mode of expanding the lungs, and especially the apices of round-shouldered and flat-chested patients, of removing the infiltrated products already existing, and of enhancing the constitutional resistance.

Dr. **William Osler** said that the last statement of the paper contained a very important truth. With imperfect expansion there was a liability to clogging of the interstitial circulation in the apices and accumulation of tissue *débris* which might afford a nidus for the development of the *Bacillus tuberculosis*. The condition of activity of this interstitial circulation differed very much in different individuals. But little was yet known of the conditions which determined the development of tuberculosis. In part, at least, it was like the old parable of the seed and the sower: the nature of the soil would favor, retard, or prevent the growth. That the bacillus of tubercle would not grow in every soil was demonstrated by autopsies in large general hospitals. At Blockley, in every hundred sections, say, fifteen or twenty cases would be found with the usual lesions of phthisis; in fifteen or twenty there were no excavations, the lung was not extensively tuberculous, but at the apices there were small areas of induration, caseous nodules, and a few peripheral miliary nodules. The soil had not been congenial, and the development of the bacillus was restricted. Without bacillus, no tuberculosis, was the opinion of ninety-nine out of every hundred clinicians of the day.

Dr. **Edward Martin** said that while connected with the department of physical education at the University of Pennsylvania he had had an opportunity of studying the effect of exercise on chest development. Lads admitted with narrow lungs and supraclavicular depression suffered, after moderate exertion, with embarrassment of the pulmonary circulation. The right heart was congested, and there was evidently blocking of the blood-current in the lungs. After six or eight months of carefully regulated exercise there was a change in the local condition; no more obstruction was offered to the right side of the heart than elsewhere; the blood-vessels responded to the additional demand put upon them. With this free circulation went an increase of chest girth, from an inch to two or two and a half inches in six months. Inspiratory exercises were nearly always given these young men, especially those with that shape of chest which had been held to predispose to phthisis. Among these exercises was deep breathing, with or without movement of the arms. The arm was raised from the body to a right angle by the deltoid. After that the lifting was done by the serratus magnus, the most important external inspiratory muscle. As the arm was carried nearer to the head, the insertion and origin of the serratus were approximated and the muscle worked at a disadvantage. For this reason expiration was practiced as the arms were carried up, and inspiration as they were brought down. Exercise should be made vigorous enough to stimulate the heart's action. Slow motions, as a rule, did not strengthen the heart muscle, but had a local effect, whereas the object in these cases was to make the circulation free and the air-tubes pervious.

Dr. **George E. Shoemaker** heartily agreed with Dr. Mays that apex expansion was an important part of the treatment of incipient lung disease. A very important point was as to the action of rarefied air in expanding the apices. In localities that were warm, moist, and low—like Florida, for example—there was no such effect, and almost the sole benefit, as far as the climate was concerned, was from the patient's ability to be in the open air all the time. Would it not be better to send more patients to a climate where direct good was gained by the more thorough ventilation of the lungs, reserving for Florida the very weak and those liable to excessive hæmorrhage or to heart failure? In regard to impure air, it must be remembered that many of the persons who enjoyed good health in spite of their home surroundings lived out of doors most of the time, the children in particular living upon the doorstep or in the street, except in stormy weather. In the same way at mountain and sea-side resorts, the small and uncomfortable rooms drove visitors out into the air; and, whether or not it was ozonized or rarefied, it was pure, out-of-door air.

Dr. **Mays** thought it rather unfortunate that Dr. Osler had not confined himself to the topic of the paper and discussed the main points of the subject in his usual able manner. He himself had purposely avoided all except an incidental reference to the bacillus; but he must now say that he could not accept the dictum, "no bacillus, no tuberculosis." It seemed very strange that, if the bacilli needed a soil in which to develop, they should be able to penetrate into that portion of the lung which was hardly ever expanded in phthisical patients. Why, if the two sexes were put side by side in the same employment, did the men become diseased in greater proportion than the women? Why this fondness of the bacilli for one sex? He must also dispute the point that ninety-nine out of every hundred clinicians accepted this dogma. Though born in Germany, the doctrine was already losing ground among the Germans. He wished, in conclusion, to make a statement which he should have embodied in the paper, that, according to the latest researches, the apices expanded more in the recumbent than in the erect posture; therefore a person inhaled more air during sleep than in his waking hours.

Macewen's Operation for the Radical Cure of Hernia, followed by a Speedy Return of the Hernia.—The **Chairman** read a paper on this subject. He thought it important to report failures as well as successes. Macewen's operation had been so generally successful that it was the more important to report the failure in this case as the immediate result had seemed to promise a cure, but the hernia had quickly reappeared. For the notes of the case he was indebted to Dr. Lambach, the surgical resident.

The patient was a man thirty-two years of age, a fresco-painter, but for some time at work dredging for oysters. When seventeen years old he first noticed a right oblique inguinal hernia, for which he wore a truss for a year and then laid it aside. The hernia remained cured for thirteen years. A year ago, while at work dredging for oysters, the hernia returned, and descended into the upper scrotum. He entered St. Mary's Hospital on the 6th of January, 1888, on account of the distress and inability to pursue his occupation. The operation was done on the 13th; on the fifth day five of the nine external stitches were removed, and on the twelfth day the remaining four. There was no pus at any time. The highest temperature was 100·2° F. He then had two chills, the first on the fifteenth day, his temperature rising to 103°; but, as there was no evidence of suppuration, as the fever yielded promptly to quinine and arsenic, and as his occupation had exposed him to miasmatic infection, this was attributed to malaria. He was kept in bed for twenty-nine days—*i. e.*, until February 11th. At this time the author examined him, and found the hernia perfectly cured. He was then allowed to get up, a spica and compress being applied. Yesterday (February 21st) the hernia was found to have returned. There had, however, been one gain—at the time of the operation the external ring was very large, requiring four double sutures; now it would only admit the point of the index finger. Moreover, the man was exceedingly comfortable, so that it was doubtful if he could be persuaded to undergo another operation.

The steps of the operation were illustrated on a model. An incision was made over the site of the hernia to its lowest point in the scrotum. With the blunt end of the scissors and the finger, the sac was then dissected from the surrounding parts, care being taken to leave no attachment to the spermatic cord. The index finger was then passed within the abdominal wall, and the peritonæum was dissected for half an inch around the circumference of the internal ring. A moderately stout ligature of chromicized catgut was tied to the lower part of the sac, and a series of stitches taken from the lower portion of the sac to its mouth. This stitch, by means of Dr. Ellwood Wilson's curved trachelorrhaphy needle, was then passed through the abdominal wall from within outward at a point half an inch above and external to the internal ring, the skin being drawn upward and outward so as to allow the stitch to emerge through the abdominal muscular wall, but not through the skin. Then traction was made on this stitch, thus puckering up the sac, which latter was drawn through the ring and rested against the inner surface of the abdominal wall to become adherent there, closing the hernial opening with a firm pad. The stitch was then carefully secured in place. The external ring was then closed with four double stitches of chromic catgut, passed from side to side.

The author had been extremely careful in denuding the inner surface of the abdominal wall to get a large raw surface at the internal ring, so as to gain firm union at that point, and the patient was kept on his back for four weeks, yet it gave way a few days after he was let up. The operation would be repeated if the man was willing.

(*To be concluded.*)

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Meeting of November 28, 1887.

The President, Dr. LAURENCE JOHNSON, in the Chair.

A Malignant Tumor in the Sac of an Umbilical Hernia; Remarks on the Ætiology of Cancer.—Dr. DANIEL LEWIS gave a history of the case of a woman, aged sixty-seven years, who had come to him in February, 1887. Until twelve months before, her health had been good, except that she had a hernia of fifteen years' duration. She had never borne children. She had had no treatment for the hernia, and nothing had been done to prevent the protrusion which took place when she was on her feet. It had been easily reducible until a year before, when she began to suffer pain about the umbilicus. The pain increased and became radiating, and she lost flesh and sleep and had fever.

Examination showed a tumor which extended nearly an inch beyond the border of the hernial ring; it seemed quite movable with the skin, and was found to invade the ring. An elliptical incision was made and the tumor was dissected out up to the ring, when careful search was made for intestinal contents; the sac was found to contain only omentum, which was not diseased. The subperitoneal tissue was infiltrated as far as the finger could reach. The patient died sixty-eight hours after the operation, apparently of shock. Dr. George T. Elliot had made a microscopical examination of the tumor, and had found it to be a large-round-celled alveolar sarcoma. In addition to the sarcomatous tissue, there were other histological elements which contributed greatly to the interest of the specimen; more or less glandular tissue was found which seemed in every way identical with the glands of Lieberkühn. He believed, therefore, that there had been an enteroteratoma which, after remaining quiescent for so long a time, had undergone sarcomatous degeneration. This was another fact which went to prove that cancer was not malignant in the beginning. The so-called hereditary origin of malignant disease was not supported by facts. Tumors of a non-malignant type proved irritating to adjacent tissues and caused cancer. The speaker believed, with Snow, that there were four or five clinical points which, if present in a given case, would prove that the disease was malignant, without resort to the microscope. For instance, a tumor which resisted all known medical agents, which showed a proneness to invade other organs and tissues and to recur after removal, which was painful, and which showed a tendency to destroy life, was malignant. There were at least four cases on record in which cancer had developed on a psoriatic base, and eczema of the nipple had been shown to cause the disease. He entered a strong protest against the common practice of applying caustics to diseased tissue which showed no tendency to recovery, as they acted as irritants, rarely did any good, and tended to bring out the malignant element. He presented a photograph of an eruption on a woman's breast which resisted treatment, and, if the breast were not amputated, he believed would become malignant.

Dr. DAVID WEBSTER referred to a case of glioma of the eye in an infant, thought to be due to the use of the obstetrical forceps.

Dr. A. F. CURRIER believed in the classification of cancer based upon the anatomical structure. He agreed with the author regarding heredity. He believed that the disease in the majority of cases began with a local irritation, and, if treated at that early stage, was curable.

Dr. W. M. CARPENTER could not accept the statement that if the five points in the clinical history mentioned by Dr. Lewis were absent it was proof that the person did not have cancer. He recalled two cases in which the autopsy showed cancer of the stomach in one, and of the omentum in the other, yet there had been no sign or symptom pointing to the carcinomatous disease during life. The patients died of some other affection.

Dr. LEWIS thought that absence of his five clinical points had not been proved in those cases.

Bunions.—Dr. ROBERT T. MORRIS read a brief paper on the subject of bunions on the great toe, considering their causation by ill-fitting shoes, the spasmodic action excited in the tendons by cramping of the foot, and the treatment. Inflammation was to be subdued by ordinary measures, such as elevation of the foot and cold or hot applications; on the corn a solution composed of salicylic acid in flexible collodion should be applied;

afterward it should be soaked in water and removed. The "anatomical shoemaker" commonly fitted a shoe to the deformed foot, and thus did what the mechanician would do if asked to apply an apparatus to promote the development of bunions. In health the great toe pointed a little inward, and the sole of the shoe should be made to correspond; it should be broad and sufficiently long, allowing full room for the expansion of the foot. The great toe should be made to point inward by retention in a compartment formed by sewing a strip of leather into the welt of the shoe. The stocking should be made also with a separate compartment for the great toe. The compartment shoe required to be low. A piece of court-plaster worn over the bunion would tend to prevent the development of a corn. In some cases the ligament had to be divided; in some the bursa and a portion of bone had to be excised. This operation could be rendered painless by Corning's method of using cocaine; it should be carried out antiseptically. Afterward a splint retaining the toes in the normal position should be applied, and subsequently the shoe with the separate compartment should be worn. The tendinous attachments should be preserved.

Dr. A. M. Phelps agreed with the author in advising the excision of bunions. By excision he would remove the head of the metatarsal bone, and get rid of the bursa and the reflex action of the tendons. Corns which appeared so frequently upon the sole of the foot were due to a narrow shoe. Wide soles and spring heels, instead of high heels, should be worn.

Meeting of December 26, 1887.

Resorcin in the Local Treatment of Acne.—Dr. G. H. Fox read a paper on this subject. There were many drugs used in the local treatment of acne, but he would confine his remarks to the one which in his hands had afforded the best results. It should be stated at the outset that there were very few cases of acne in which local treatment alone would effect a cure. In certain cases ordinary stimulating local treatment was worse than useless. From a therapeutic standpoint all cases of acne might be divided into two varieties, the indolent and the irritable. In the indolent variety, which included about half the cases, there was a doughy, thick skin covered with projecting comedones, papules, and pustules. One could in these cases press out the contents of the distended glands without doing any injury to the skin. These were the cases which were benefited by local treatment. On the other hand, there was perhaps an equal number of cases in which the glands were normal, the lesions being chiefly of a vascular character, with a few red blotches scattered over the face, and a marked tendency of the face to flush after eating and excitement. There were a few comedones, and any attempt to press them out would make the face look a great deal worse. The skin was thin and sensitive. In this class of cases local treatment would not effect a cure, and was apt to make the condition worse; we had to depend upon tonic and hygienic measures. But in the indolent class of cases, in which there was little acute inflammation of the skin, we could use some strong stimulating local treatment to advantage. The sulphur and mercurial ointments and lotions did a certain amount of good, but he thought the treatment with green soap infinitely superior. The chrysarobin treatment, as suggested by Dr. Metcalf, was certainly efficacious, but in his opinion the objections to it more than counterbalanced the objections to the disease. Resorcin he had found equally curative and free from the objectionable qualities of chrysarobin. Resorcin could be applied as a lotion or as an ointment. It caused a low grade of inflammation. Like carbolic acid, it was a mild caustic. Its application was followed by death and exfoliation of the thick epidermis, leaving a thin, healthy skin.

The President thought the difference in the appearance of the two classes of cases described by the author was due to temperament rather than to different varieties of the same disease.

Dr. Fox thought the old distinction made between the lymphatic and the sanguine temperaments might well be kept in mind at times. It was probable that these two different conditions of the skin pertained to the general temperament, but the point which he laid stress upon was the need of difference of treatment.

The Treatment of Chorea by Cerebral Rest.—Dr. J. Leonard Corning said that, in order to consider the subject in a systematic manner, he would in this paper briefly review the symptoms of chorea and then take up the subject of treatment. He did not approve of the subdivisions, chorea major and chorea minor. Among the exciting causes of chorea he laid stress upon too great mental exertion imposed upon children by parents and teachers; worry, a discontented, fidgety state of mind, and persistent imitation of those affected by chorea were also exciting causes, as was likewise phimosis, as well as other peripheral irritations. As to the seat of the lesions in chorea, it had been found that irritations of the gray matter of the cord, particularly of the posterior horns, might give rise to choreic movements; such movements might also be engendered by irritation of the gray matter of the brain. In the majority of cases there was more or less mental disturbance, and, as mental action was generated in the cortex, he could safely infer that in chorea there was some disturbance of the cortex. There was a small number of cases in which the irritability extended to the cord. In a relatively small number there was an organic lesion, and in such cases there was little hope of a cure. The treatment implied removal of peripheral irritations, when such exciting causes existed, and rest to the brain. If the child was at school it should be taken away, and even mild forms of intellectual work be prohibited. Complete rest to the exhausted ganglia could be secured only by sleep—by a state of complete unconsciousness. The patient probably was in the habit of taking insufficient sleep for even a healthy brain; much more would be required for a diseased, for an overworked brain. When there was a tendency to sleeplessness, as there was in many cases, it would be impossible to secure at once sufficient sleep to meet all the cerebral demands. In that event bromides should be given during the day, in increasing doses, to prepare for complete rest when the time came to go to bed. The most difficult class of cases were those in which there were digestive disturbances preventing medical treatment. The amount of sleep could be increased progressively by habit until in some cases it reached as much as sixteen hours a day. Peripheral irritation engendered by sound and light should be particularly avoided.

The author was accustomed to give Fowler's solution in increasing doses three times a day. He at the same time applied galvanism to the head after rendering the scalp anæmic by a rubber band and by ice-water. It was well in the early part of the treatment to confine the patient strictly to a farinaceous diet. He sometimes applied compression to the carotids to decrease the cerebral circulation.

Dr. David Webster had had one case of chorea in a lady, aged over twenty years, in which he was requested to operate for insufficiency of the externi of the eye, and in which there was no error of refraction. She was about three quarters cured of her choreic symptoms after the second operation. He had found benefit from correction of errors of refraction in some cases. He thought there was no doubt that removal of strain or irritation in certain portions of the peripheral nervous system would have a beneficial effect upon the general nervous system and indirectly upon the chorea.

Dr. Koplik had employed perfect rest in the treatment of chorea, particularly in children from five to twelve years of age, restraining all mental exertion, having the children eat at a table separate from the parents' lest they be corrected for their choreic movements, and giving abundant sleep. He thought children might be frightened if inclosed in a dark room during the day. Drugs, in his opinion, were valuable only as they acted as tonics.

Dr. Fox said, with regard to the use of galvanism to the head, that when the electrodes came in contact with the hair no effect was obtained, and when the bare scalp was touched it was apt to cause pain.

The President recited two cases in which chorea followed directly upon an attack of rheumatism, and he was disposed to look upon the rheumatism as causative of the chorea. These children were anæmic, and he prescribed a nitrogenous diet, and would object to the author's suggestion to limit them to farinaceous food. He objected also to the indiscriminate use of large doses of bromides. Regarding the very large doses of Fowler's solution which the author and others had succeeded in habituating some of their patients to, he had seldom been able to carry the dose higher than ten drops without producing toxic symptoms.

Dr. W. M. Carpenter remarked upon the conflicting testimony of different writers regarding the curative value of arsenic in chorea, and said that some of the most experienced practitioners professed never to have seen a case cured with that drug. One recent writer maintained that in all such cases there were relapses, and that the relapses were worse than the original attack. The speaker mentioned one case of chorea which resisted all treatment, and terminated fatally.

Book Notices.

A Practical Treatise on Diseases of the Hair and Scalp. By George Thomas Jackson, M. D., Instructor in Dermatology in the New York Polyclinic, etc. New York: E. B. Treat, 1887. Pp. 21 to 356. [Price, $2.75.]

According to some of our would-be savants, the hair is the most direct connecting link between man and his Simian ancestry, and they confidently predict that in a more advanced stage of its evolution the human race will be bald-headed.

The men and women of the present day, however, do not seem desirous of attaining to that crowning civilization when the possession of hair will be accounted a superfluity; on the contrary, they cling most closely to their capillary symbol of savagery, and contemplate its loss with the same dismay as we may imagine our ancestors observed the gradual disappearance of their caudal appendages. According to our present standard, bald-headedness does not represent the highest type of civilization, but rather is associated with disease and age, and those who wish to preserve the semblance of youth, health, and beauty are most solicitous to preserve their capillary attractions.

Perhaps upon no other subject is the physician more frequently consulted than upon the loss of the hair and the best means of preserving it, while thousands of nostrum-venders find in an eager and credulous public ready purchasers of their "hair restoratives," "tonics," etc.

A scientific treatise upon the diseases of the hair and scalp has a great interest both for the specialist and for the general practitioner, not only on account of the intrinsic importance of the subject, but also because of the lack in medical literature of any complete and systematized collation of our knowledge respecting these diseases.

There have appeared many monographs and treatises on the hair, but they have been more or less incomplete and rather of a popular than a scientific character. While certain diseases of the scalp which occur in connection with diseases of the general integument have been treated of more or less fully in our text-books on dermatology, the essential diseases of the hair have received a brief and for the most part an unsatisfactory consideration. The most important contributions which have been made to our knowledge of these subjects are found scattered here and there in periodical medical literature, and are for the most part inaccessible to the general profession.

Dr. Jackson deserves great credit for his painstaking researches through this heterogeneous collection, and the admirable judgment displayed in winnowing the wheat from the chaff. The work before us contains a concise and at the same time complete presentation of all essential facts relating to the diseases of the hair and scalp, special prominence being given to the more practical points pertaining to their diagnostic treatment.

In Part I are considered the anatomy and physiology of the hair and the hygiene of the scalp and hair, Part II treats of the essential diseases of the hair, Part III of parasitic diseases of the hair, Part IV of diseases of the hair secondary to diseases of the skin, the whole concluding with a complete bibliography. Too much praise can not be given to the author for the compilation of this very complete and systematically arranged bibliography, the extent and variety of which illustrate the importance of the subject. It will prove of invaluable service to those wishing to prosecute further investigations in this direction.

The work is embellished by numerous cuts illustrating the anatomy of the hair, as well as the clinical appearance of many of the diseases included within this important class of affections.

The author's practical familiarity with the subjects under consideration is evident on every page, and we most cordially commend the book to the profession as the only complete, systematic, and scientific treatise on diseases of the hair and scalp that has appeared in this country.

The Efficacy of Coca Erythroxylon. Notes and Comments by Prominent Physicians. Paris and New York: Mariani & Co. Pp. 61.

This work comes to us as a supplement to the fifth edition of M. Mariani's admirable "Treatise on Erythroxylon Coca," and certainly deserves professional recognition. While not entering into the exhaustive details embodied in former works, it substitutes therefor that which from a practical standpoint is far more valuable—*i. e.*, clinical data from competent observers. A careful selection of articles relating to coca will be found in its pages, and much that is instructive and interesting can be gathered from its perusal. This work comes at an opportune time, as it reconciles many conflicting statements and opinions regarding the efficacy of coca.

BOOKS AND PAMPHLETS RECEIVED.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, A. M., M. D., Professor of Skin and Venereal Diseases in the Medico-chirurgical College and Hospital of Philadelphia, etc. With Colored Plates and Other Illustrations. New York: D. Appleton & Company, 1888. Pp. viii–633. [Price, $5.]

The Nature of Contagion. By J. W. McLaughlin, M. D., Austin, Texas. [Reprinted from "Daniel's Texas Medical Journal."]

Congenital Talipes Equino-varus. By Charles L. Scudder, of Boston. (The Boylston Prize Paper of the Boylston Medical Society of Harvard University for the Year 1887.) [Reprinted from the "Boston Medical and Surgical Journal."]

A Practical Treatise on the Medical and Surgical Uses of Electricity. Including: Localized and General Faradization; Localized and Central Galvanization; Franklinization; Electrolysis and Galvano-Cautery. By George M. Beard, A. M., M. D., etc., and A. D. Rockwell, A. M., M. D., etc. Sixth Edition. Revised by A. D. Rockwell, M. D. With nearly Two Hundred Illustrations. New York: William Wood & Company, 1888. Pp. xxx–758.

Third and Fourth Biennial Reports of the Eye and Ear Clinic at the Central Dispensary and Emergency Hospital of Washington, D. C. Dr. Swan M. Burnett, Director, etc. Including a Report of the Post-graduate School of Ophthalmology, and a Bibliography, of the Director.

A Year's Work in Laparotomy (Forty-five Operations). By Paul F. Mundé, M. D., etc. With Four Photo-engraved Plates. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Drainage after Laparotomy. By Paul F. Mundé, M. D., etc. [Reprinted from Volume XII, "Gynæcological Transactions."

Contribution à l'étude de la syphilis des fosses nasales. Par le Dr. E. J. Moure, Professeur libre des maladies du larynx, des oreilles et du nez, etc., Paris.

A New Method of treating Episcleritis. By David Webster, M. D., etc. [Reprinted from the "International Journal of Surgery and Antiseptics."]

Agnosticism, based on Physical Science. Second (revised) Edition. By Alex. W. Stein, M. D., Visiting Surgeon to Charity Hospital, New York, etc., 1888.

Nouvelle méthode de traitement de la diphthérie. Par le Docteur G. Guelpa, Membre de la Société de médecine pratique, etc. Contribution au traitement de la diphthérie. Premières applications de la méthode de traitement de la diphthérie faites a l'hôpital Trousseau. Considérations et propositions au sujet d'un cas de diphthérie. Paris: Octave Doin, 1887. Pp. 7 to 76.

The Bones of the Leg considered as One Apparatus. By Thomas Dwight, M. D., Parkman Professor of Anatomy at Harvard University. Boston: Cupples & Hurd, 1888. Pp. 18.

Fifth Annual Report of the New York Skin and Cancer Hospital.

The First Quarterly Report of the Michigan State Laboratory of Hygiene. By Professor Victor C. Vaughan, M. D., Ph. D., etc. [Reprinted from the "Annual Report of the Michigan State Board of Health" for the Year 1887.]

Acute Psychoses following Gynæcological Operations. By Edward J. Ill, M. D., etc., Newark, N. J. [Reprinted from the "Pittsburgh Medical Review."]

Dangers in Gasoline. By John H. Kellogg, M. D., etc., Battle Creek. [Reprinted from the "Annual Report of the Michigan State Board of Health" for the Year 1887.]

The Nervous System and the Mind. A Treatise on the Dynamics of the Human Organism. By Charles Mercier, M. B. London and New York: Macmillan & Co., 1888. Pp. xi–374. [Price, $4.]

The Passage of Air and Fæces from the Urethra. By Harrison Cripps, F. R. C. S., Assistant Surgeon to St. Bartholomew's Hospital, etc. London: J. & A. Churchill, 1888. Pp. 80.

Certain Foods in Relation to Treatment. By John A. McCorkle, M. D., Professor of Principles and Practice of Medicine and Clinical Medicine in the Long Island College Hospital. [Reprinted from the "Brooklyn Medical Journal."]

A New Method of treating Episcleritis. By David Webster, M. D., Professor of Ophthalmology in the New York Polyclinic, etc. [Reprinted from the "International Journal of Surgery and Antiseptics."]

The Cure of Hernia. By Henry O. Marcy, A. M., M. D., of Boston, Mass. [Reprinted from the "Journal of the American Medical Association."]

Cystitis in the Female. By Henry O. Marcy, A. M., M. D., etc. [Reprinted from the "Journal of the American Medical Association."]

Elixir Paraldehyde. The Coming Remedy as a Substitute for Opiates and Anodynes. By A. B. Cook, A. M., M. D., etc., Louisville, Ky. [Reprinted from "Progress."]

Salt in Dermal Hygiene and Therapeutics. By Henry G. Piffard, M. D., New York. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Sur un cas de cirrhose hypertrophique pigmentaire dans le diabète sucré. Par A. Brault et L. Galliard. [Reprinted from the "Archives générales de médecine."]

The Efficacy of Coca Erythroxylon, Notes and Comments by Prominent Physicians. Paris and New York: Mariani & Co. Pp. 61.

Reports on the Progress of Medicine.

GENERAL MEDICINE.

By H. N. VINEBERG, M. D.

The Temperature in the Epileptic State.—Professor Bourneville ("Le progrès médical," 1887, No. 35) distinguishes two periods in the epileptic state, which he terms the *convulsive period* and the *meningitic period.* In the article there are temperature charts which show elevation of temperature in cases with only the convulsive period which ended in recovery. In one case the thermometer registered 40·3° C. (104·5° F.). In two other cases—one terminating fatally during the convulsive period, the other during the meningitic period—the temperature respectively was 41·4° C. (106·5° F.) and 42·4° C. (108° F.).

Great Reduction of Temperature by Strangulation, and Recovery.—Bourneville (*ibid.*, No. 38, 1887) relates the case of a man sixty-two years of age who was found in his room suspended from the ceiling by a rope around his neck, in whom the rectal temperature registered as low as 34·1° C. (93·4° F.). Sensibility and consciousness were completely abolished, the pulse was just perceptible (84), and the respirations were irregular and diaphragmatic. The patient was resuscitated by frictions, stimulation, etc., but the temperature did not reach its normal height until five hours after he had been found.

The Treatment of Exophthalmic Goitre.—Dr. R. Vigouroux (*ibid.*) No. 43) lays great stress upon the kind and method of application of electricity in the treatment of this affection. He employs faradization in the following manner: (1) A large electrode from 7 to 8 ctm. in diameter is applied to the inferior part of the neck posteriorly, and is held in position by the means of a band. The other electrode is olive-shaped or button-shaped, less than 1 ctm. (⅖ in.) in diameter, and is connected with the negative pole of the battery. This electrode is applied behind the angle of the jaw, in front of the sterno-mastoid muscle, and is made to press upon the carotid artery. The application is made during a minute and a half, and is then transferred to the opposite side, where it is continued for the same length of time. (2) The small electrode is then passed lightly over both orbiculares palpebrarum in turn. (3) The olive electrode is now replaced by a plate 4 ctm. (1⅗ in.) in diameter, and is applied to the thyreoid tumor. (4) The small electrode is now rendered positive, and is applied to the precordial region, in the third intercostal space, to the left of the sternum, and the current should be sufficiently strong just to excite fibrillar contractions. The application is made for two or three minutes. The séances are repeated every second day. There is no advantage in repeating them daily. The ill success of the treatment of this affection by some, the author thinks, is due to want of attention to the foregoing details. In most cases it was the only treatment he employed, and his results were exceedingly good. Hydrotherapeutics is unnecessary with this form of treatment.

Treatment and Pathology of Catarrhal Icterus.—M. A. Chauffard ("Rev. de méd," 1887, No. 9) publishes seven cases of catarrhal icterus in which he used enemata (2 quarts) of cold water, as first recommended by Krull. Thinking that he might shorten the course of treatment, he gave the enemata twice daily to some of the patients, but while these were well borne the treatment was no more successful than if only one had been given. The light color of the fæces in catarrhal icterus is due not only to absence of bile, but also to the presence of fatty products. In two cases in which the author examined the fæces with the microscope, in addition to plaques of fatty matter, he found acicular crystals which corresponded in all respects to saponified fat. In all his cases he observed enlargement of the spleen. This enlargement of the spleen has been explained on a purely mechanical theory, the interlobular biliary vessels being filled with bile pressing against the interlobular branches of the portal vein, and thus bringing about congestion of the portal blood-vessels. This explanation the author does not think satisfactory, for the degree of splenic enlargement is not always in proportion to the extent of the biliary obstruction. He holds that catarrhal icterus is an infectious disease, and that the enlargement of the spleen is due to specific organisms which circulate in the blood. The action of cold-water enemata in treatment he explains by a peristaltic action which is set up along the whole length of the intestines; and, secondly, by a reflex action from the duodenum to the biliary ducts. In support of this opinion, a case is cited in which the enemata were followed by an attack of hepatic colic, and subsequently by attacks of intermittent hepatic fever. The treatment is therefore contra-indicated where calculi in the bile-ducts are suspected.

Incubation Period of Roetheln.—Dr. F. Willcocks and Dr. G. Carpenter ("Practitioner," Sept., 1887) observed an outbreak of rötheln and paid particular attention to the period of incubation. This period is stated by different authorities as varying from six to twenty-one days. Dr. Bristowe cites one undoubted case of five days' duration, and the authors observed one case in which the period was of about the same duration. In another of their cases the incubation stage was eight days. A third case gave a period of fourteen days.

[In an outbreak of this disease observed by the reporter on board of a sailing vessel the incubation period of the first cases was at least over thirteen days, for that period had elapsed after leaving port before the disease manifested itself.]

Intra-cerebral Hæmorrhage in the Young.—Dr. B. Sachs ("Jour. of Nervous and Mental Diseases," Aug., 1887), is of the opinion that hæmorrhage within the cerebral substance in the young is commoner than it is supposed to be. He narrates in detail the histories of two cases which ended in recovery, and hence the opportunity of confirming the diagnosis by an autopsy was lost. The clinical events, however, as related by the author, pointed very strongly to that pathological state as being the cause of the symptoms. The first case occurred in a healthy child, two years and a half old, which had just recovered from a slight attack of amygdalitis. The day preceding the night during which the attack of hemiplegia set in it was noticed that the child had been very quiet and gave expression to no vocal sounds. The paralysis, which was not complete, affected the right side of the body and was attended with aphasia. Improvement set in on the fifth day, the child began to speak on the thirteenth day, and all symptoms disappeared in three weeks. No further cerebral trouble was noticed, although the child had gone through an attack of whooping-cough some months later. The author, in making the diagnosis, properly excluded (1) diphtheritic paralysis, which seldom or never occurs as a hemiplegia, (2) thrombosis, and (3) embolism. The latter condition was excluded because the heart was healthy, there had been no history of rheumatism, and, in addition, the onset was gradual.

The second case was observed in a young man nineteen years of age, with a good family history, who was seized with a slight hemiplegia while preparing for his college examinations. The onset was gradual, without coma or convulsions, and after three weeks, during which the symptoms had receded typically, the paralysis disappeared completely. Exactly one year and one day later he was seized with a similar attack, manifesting itself first by numbness. After walking home, an hour and a half later, he became comatose, in which condition he remained for eighteen hours. There were no convulsions. The paralysis, which was complete, affected the left side, and, though the patient was left-handed congenitally, but right-handed by education, there was no aphasia. The author draws attention to the second case, which illustrates the danger of repeated attacks of hæmorrhage when it occurs in very young persons. As to the pathology of these cases, the analogy with adult cases justifies the supposition that the lesion is a similar one—miliary aneurysms of the middle cerebral artery. The author refers to Osler's case, published in the "Canada Medical and Surgical Journal" (1886), in which an aneurysm of the anterior cerebral artery was found in a boy six years of age.

Cases of Spontaneous Rupture of the Aorta and Heart.—Dr. W. Coode Adams ("Lancet," Oct. 1, 1887) reports two cases of this kind. One case occurred in a woman twenty-three years of age, of healthy parentage and family history. She had had typhoid fever eleven months before. She was suddenly seized with cardiac pain one day, but recovered in a few days. Some days later she had a similar attack, attended with faintness and vomiting. She became comatose, and died fourteen hours afterward. At the autopsy, a small opening just sufficient to admit a probe was found in the posterior wall of the aorta at its junction with the left ventricle. No areas of fatty degeneration could be detected. The valves of the heart were normal.

The second case was in a man fifty-nine years of age, who had suffered for some months with occasional but slight pain in the cardiac region, the pain radiating into the arms. One morning he was seized with vomiting, and was found dead a few hours later. A small valvular opening was found in the anterior wall of the left ventricle. The mitral and tricuspid valves were normal, the aortic valves were atheromatous, and the coronary arteries had undergone extensive calcareous degeneration.

On the Incidence of Albuminuria among the Sick.—Dr. I. Grainger Stewart ("Brit. Med. Jour.," Oct. 15, 1887) has made careful investigations regarding the presence of albuminuria in 150 consecutive patients in private practice, in 150 consecutive cases in the Royal Infirmary, in 100 patients at the out-door department, in 50 patients in the Royal Hospital for Sick Children, in 40 cases in one of the wards of this hospital which is devoted to the treatment of patients suffering from alcoholism, in 50 patients in the Fever Hospital, and in 25 cases of women who had been confined in the Maternity Hospital. The result showed that albumin was present in the urine in 24 per cent. of the private patients, in 49 per cent. of the infirmary patients, in 19 per cent. of the Out-door Infirmary patients, in 14 per cent. among the children, in 66 per cent. in the fever patients, and in 72 per cent. in the maternity patients. The probable causes of the albuminuria were nephritic, febrile, vascular, alimentary, nervous, glycosuric, functional, and accidental. [For further details we must refer those interested in the subject to the original article, which is poorly adapted for condensation.]

A New Contrivance to aid in the Diagnosis of Heart Murmurs.—Dr. W. Whitla (*ibid.*, Nov. 26, 1887; "Practitioner," Feb., 1888) describes this contrivance, which he has termed a systolometer, and its mode of application as follows: It consists of a small saucer-shaped disc of metal, about half an inch in diameter, from the concave surface of which arises a hollow stem, which receives a fine silver wire capable of being retained by the tiny thumb-screw in the socket formed by the hollow stem. The end of the wire is bent at a suitable angle, and, tipped with a small bead, is made probe-pointed. The convex side of the disc is warmed, and, being tipped with lead plaster, will firmly adhere when pressed against the chest-wall over the region of the apex-beat of the heart. The motion of the impulse is thus communicated to the wire, which, acting as a lever, can be made to exaggerate each movement in proportion to the length of wire. If, now, in the vicinity of the apex-beat the ordinary stethoscope is applied and the wire so adjusted that it taps slightly against the wood of the stethoscope, the ear will hear what may be practically regarded as an artificial standard systolic sound by which murmurs can be timed with ease and accuracy.

On the Causes of Subcutaneous Inflammation and Suppuration.—Dr. P. Grawitz and Dr. W. de Bary ("Virchow's Archiv," Bd. cviii, Hft. 1) have been experimenting to determine the relationship between subcutaneous injection and inflammation and suppuration. The literature on this subject up to the present time shows that (1) in man various subcutaneous injections may be made, even without disinfected instruments, without evoking suppuration; (2) that in dogs as much as 350 c. c. of water and over 200 c. c. of oil and milk, which have been rendered absolutely sterile, may be absorbed without any untoward effect; and (3) that when in dogs the injection of indifferent sterilized fluids is followed by suppuration, bacteria in the pus are detected. Of different fluids which can not be taken up by the lymph-vessels without further change—such as dilution and division—solutions of salt and of sugar were first experimented with. These solutions, when injected repeatedly or in large quantities, gave rise to œdema, but not to suppuration, even when the solution contained numerous staphylococci. Suppuration occurred only when the skin became necrosed, or when the animals wounded it by biting or by scratching. Acrid substances, soluble in water, may be divided into three groups, according to whether they destroy, hinder the growth of, or are indifferent to, the pus coccus.

To the first group belong corrosive sublimate and nitrate of silver, which, in five-per-cent. and weaker solutions, certainly kill the pus coccus. Of the second group, the mineral acids, potash and soda solutions, and ammonia, were subjected to experimentation. Acids in one-per-cent. solutions were absorbed without injury, even when pus cocci were injected at the same time. The same results were obtained with dilute solutions of potash. Concentrated solutions of this agent produced a soft hæmorrhagic mass, but no suppuration. On the other hand, ammonia, in sterilized solution, was followed in the dog by suppuration; cultivations of the pus remained sterile; weak solutions, even with the addition of pus cocci, were simply absorbed; but, on the injection of stronger solutions with pus cocci, these were found in large numbers in the developed abscess.

These experiments show that, in dogs and rabbits, the subcutaneous injection of pus cocci into normal subcutaneous tissue can not evoke inflammation, and, further, that chemical substances of various kinds, free of bacteria, under certain conditions, will produce suppuration, and, when the solution is of a certain strength, it is certain to produce suppuration in the right species of animal.

The Cure of Anthrax by Bacteria.—Pawlowsky ("Ctrlbl. für klin. Med.," 1887, No. 39) has had the following results with this novel method of treatment: Cases of local anthrax were cured by the subcutaneous injections of various micro-organisms, but most promptly with Friedländer's pneumococci. The yellow pus cocci had a similar effect, but the *Bacillus prodigiosus* was uncertain in its action. A cure of general anthrax was obtained only occasionally, and here also the best results were obtained with the pneumococcus. The injection of the *Staphylococcus aureus* into the circulation did not save the animals with anthrax, neither did the cocci of erysipelas, or the *Bacillus prodigiosus.* A microscopical examination confirmed the progressive phases of the struggle between the organism and the anthrax bacilli in all the foregoing experiments. These phases were illustrated by the lesser number of the bacilli in the organism, and in the taking up and destruction of these by the phagocytes.

Trismus or Tetanus Neonatorum.—Dr. E. Peiper (*ibid.*, No. 42) has confirmed Beumer's experiments, published recently, which went to show that tetanus could be transmitted to mice and rabbits by inoculating them with portions of tissue from the umbilical wound of a child suffering with trismus. Peiper carried the experiments further, and made inoculations with sterilized cultivations of the tissue, which showed, among various forms of cocci, small, delicate rods. Of six mice thus inoculated, all were attacked, after a variable period, with tetanus. Two guinea-pigs were inoculated with portions of muscle from these mice, and in from four to five days they also showed unmistakable symptoms of tetanus. These experiments teach how essential it is to treat the umbilicus in the newly born with the greatest care. They also show how the disease may be carried about from one to another by unclean hands and instruments.

The Influence of Traumatism upon the Origin of Gastric Ulcer.—A. Ritter (*ibid.*, No. 43) has undertaken to test by experiments on animals the clinical observations of Leube, and the post-mortem evidences in one case found by Hofmann, regarding the origin of gastric ulcer through traumatism of the external surface in the region of the stomach. In three instances in which dogs, after being well fed with meat and afterward anæsthetized, were hit several times with a hammer in the region of the stomach, and then killed, the following conditions were found: In one case, in addition to rupture of the left lobe of the liver and copious hæmorrhages into the abdominal cavity, there was a fresh hæmorrhage under the mucous membrane of the stomach, in another case there were two hæmorrhagic elevations of the mucosa, and in the third case the results were negative. The author maintains that in the two instances in which pathological changes were found, if the dogs had been allowed to live under certain conditions the digestive action of the gastric juice would have produced ulcers after a time. He draws attention to the circumstance that in the female sex the conditions for the origin of gastric ulcer in traumatism exist in the tight-laced corsets.

Experimental Researches regarding the Causation of Gastric Ulcer.—Deches (*ibid.*, No. 47), taking into consideration the circumstance that statistics show that gastric ulcer occurs with great frequency in cooks, undertook to carry out some experiments regarding the rôle hot food plays as a factor. Two medium-sized dogs were slightly narcotized and hot soup of a temperature of 50° (R. or C. ?) was introduced into the stomach. The dogs were afterward killed by anæsthetization. The autopsy revealed in one of the dogs a small hyperæmic patch in the neighborhood of the pylorus caused by a small hæmorrhagic extravasation between the mucous and muscular layers. In the other dog there was also found on the posterior wall a small hæmorrhage between the mucous and muscular layers, with slight elevation of the mucous membrane. In addition to this there were, contiguous to the pylorus, two small areas with the typical appearance of gastric ulcer. The experiments, therefore, confirmed the clinical observation that hot foods act as a factor in the causation of ulcer of the stomach.

Asthma Crystals without Asthma.—Dr. Pfuhl, an army surgeon ("Dtsch. med. Ztg.," 1887, No. 76), relates the case of a soldier whose expectoration contained numerous crystals described by Leyden as being characteristic of asthma without the slightest evidence of that affection being manifest. The author has examined the sputa of 855 patients suffering with diseases of the lungs and found the crystals only in this case.

Miscellany.

On the Relations of the Profession to the Public.—In concluding his annual address before the Philadelphia County Medical Society, January, 1888, the president, Dr. J. Solis-Cohen, commented as follows on the relations of the profession to the public:

It is to be deplored, on the score of professional ethics, that mention of some of our scientific work is occasionally noted unofficially in the public newspapers, despite the express interdiction in our by-laws. Whether this prohibitory clause is deemed judicious or not, it is plainly the duty of all members to accede to its behests. Those who disapprove of it should present their reasons for so doing in full meeting and should endeavor to have it rescinded. They have neither the right to ignore it on the one hand, nor the right to disobey it on the other. On several occasions when reporters of the daily press have been present at our meetings they have assured me that they were present on invitation of a member; that they had no desire to intrude, and had believed that their presence would be agreeable to the society. This subject leads me to offer a few remarks upon certain relations of the profession to the public. While there is no reason to doubt that much of the individual editorial advertisement of subjects discussed or to be discussed at societies, or of operations performed or to be performed in public places or in private, is due to officiousness on the part of a student, a follower, an attendant, or a patient, there is equally good reason to believe that most of it is courted, directly or indirectly, by the individual most interested. Of this fact I have been amply assured by newspaper men who have been my own patients, and to whom I have put the question direct. I have been assured, further, that it could be taken for granted that little matter of personal medical importance ever gains access to the papers without the knowledge of those most intimately concerned. On the other hand, it is equally true that matters of some immediate momentary interest to the public do not always reach the newspapers, even when passing through the mails in hundreds of notices openly printed upon postal cards.

While it is gratifying to believe that this itch after newspaper notice may be much less prevalent in Philadelphia than in some other localities, the hope is to be indulged that it may eventually become entirely extinguished. The disease at present is in great measure a mere matter of taste—quite poor taste, according to the ethics of the Philadelphia County Medical Society.

One custom in which the ordinary conduct of the physicians of Philadelphia is to be commended in their relations to the public consists in their unwillingness to cater to gratifications of the morbid appetite of the newspaper public for tattle as to the nature of the diseases with which some of their distinguished patients may be afflicted, and as to the prospects of their death or survival. Propriety indicates that such inquiries should be referred to the patient if he is in a responsible condition; or, if not, to that member of the family upon whom the responsibility has devolved. The confidential relations of a patient to his physician should remain undisturbed even when the patient is no longer competent to withdraw his confidence, and no communications presumptively disagreeable to him in his senses should be furnished for press gossip without the consent of those who are most immediately interested. The pleasure derived by an invalid from the daily perusal of his favorite newspaper is often exceedingly great—far greater than when, under the press of affairs, he read chiefly headings and telegraphic items. He reads it much more thoroughly, sometimes even to the advertisements. As he reads day by day of what is going on in the great world outside, his little world of bedroom life seems somewhat less constricted. Let us avoid curtailing his gratification by acts of ours. If his newspaper can not be taken up without a dread of seeing some paragraph discussing the nature of his malady and the prospects of his early demise, this innocent source of enjoyment is poisoned for him. He must rest content with a mutilated paper, the very gaps in which are repulsively suggestive, or he must consent to have it read to him, or give it up altogether and thus become deprived of taking interest in many things outside of his own illness. It is hard enough for him to fear or to know that his malady is incurable, without having the fact forced upon his attention at some comparatively happy moment when it is out of his thoughts. Harder still, perhaps, to steel himself into indifference.

It is unnecessary to mention examples. They must be familiar enough. In some instances there has been abundant reason to believe that death has been hastened by thoughtless comments in newspapers. Shall the individual always be sacrificed to the multitude? It has been stated that occasionally, when potentates or very wealthy individuals have been the subjects of these items, special copies of newspapers have been printed for their use, in which the objectionable personal passages of the general edition have been replaced with other matter. But there is little hope that the sores of the afflicted will not be exposed to public gaze, unless their own physicians protect them by the charity of their reticence. The public maw is so rapacious that the average newspaper man dares not deprive it of any tidbit, however unfit the food, and, worse than the cannibal who sometimes kills the sick man that his people may devour him, the editor sometimes delivers the sick man to his readers that they may devour him even while he is dying.

The Medical Department of the University of Buffalo.—The forty-second annual commencement exercises were held on Tuesday, February 28th. The degree in medicine was conferred on forty-four candidates.

The thirteenth annual meeting of the Alumni Association was held on the same day. The address of welcome was delivered by Dr. M. D. Mann.

The Law of Compensation.—"It is reported," says the "Evening Wisconsin," "that a Georgia farmer made $100 off an acre planted in watermelons, and a physician in the neighborhood made $200 off the same acre."

Medicine and the Law.—The similarity of these professions lies in the fact that members of each are visited for the same purpose—to enable a man to recover. And the likeness continues in that it is often difficult to recover from the recovered man.

The Health of Boston.—During the week ending Saturday, March 3d, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 18 cases and 6 deaths; scarlet fever, 28 cases and 1 death; typhoid fever, 5 cases and 4 deaths; measles, 56 cases. There were also 29 deaths from consumption, 47 from pneumonia, 1 from whooping-cough, 15 from heart disease, 8 from bronchitis, and 4 from marasmus. The total number of deaths was 207, against 187 in the corresponding week last year.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 2d:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending February 11th corresponded to an annual rate of 22·2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 15·2, and the highest in Preston, viz., 36·4 in a thousand. Small-pox caused 31 deaths in Sheffield, 1 in Bristol, 1 in Leeds, 2 in Oldham, and 1 in Nottingham.

London.—One thousand eight hundred and thirty-eight deaths were registered during the week, including 15 from measles; scarlet fever, 36; diphtheria, 40; whooping-cough, 154; enteric fever, 12; and diarrhœa and dysentery, 12. Diseases of the respiratory organs caused 504 deaths; different forms of violence, 58; and 4 suicides were registered. The deaths from all causes corresponded to an annual rate of 22·4 in a thousand. In greater London 2,361 deaths were registered, corresponding to an annual rate of 22·3 in a thousand of the population. In the "outer ring" 12 deaths from diphtheria, whooping-cough, 48, and scarlet fever, 6, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending February 11th in the sixteen principal town districts of Ireland was 29·6 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 8·5, and the highest in Lurgan, viz., 71·8 in a thousand. In Dublin 202 deaths were registered, including 1 from measles; whooping-cough, 9; scarlet fever, 6; enteric fever, 2; diarrhœa, 2; and dysentery, 1.

The deaths registered in Ireland during the quarter ending December 31, 1887, corresponded to an annual rate of 17·5 in a thousand.

Scotland.—The deaths registered in eight principal towns during the week ending February 11th corresponded to an annual rate of 22·5 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 14·4, and the highest in Aberdeen, viz., 27·5 in a thousand. The aggregate number of deaths registered from all causes was 568, including 13 from measles; diphtheria, 8; scarlet fever, 8; whooping-cough, 24; fever, 2; and diarrhœa, 7.

During the quarter ending December 31, 1887, the deaths registered corresponded to an annual rate of 18·8 in a thousand of the estimated population.

Buenos Ayres.—The United States minister, in his dispatch dated January 12, 1888, states that cholera has appeared at Salta. "In the past three days there have been 20 cases and 7 deaths. The Government has sent a number of physicians there with a full supply of medicines. Salta is a city of 40,000 inhabitants, located near the 24th parallel, 10 degrees north of Buenos Ayres, and not far from Bolivia. It is a beautiful place 3,780 feet above the sea-level, and at times inundated by the Arias and Silleta rivers, which is always followed by malarial fevers. It is regarded very unhealthy generally."

Callao.—The United States consul, in his dispatch dated January 25, 1888, states that "the latest cholera reports from Chili show a falling off of the disease at Santiago, and a slight increase at Valparaiso and the southern ports. The most unfavorable statement refers to the appearance of two cases of the epidemic at the city of La Serena, a short distance inland from Coquimbo to the northward of Valparaiso. This is the only indication of a deviation in the course of the disease, which had been proceeding steadily in a southwardly direction. Here the interdiction of all vessels from Chilian ports is still vigorously maintained, and last week a British man-of-war, the Hyacinth, from Arica, was refused admittance, although official interference was resorted to. Steamers arriving from Panama, and touching at Guayaquil, are subject to five days' quarantine of observation, owing to the appearance of yellow fever at the last-named port. The public health of Lima and Callao continues to be satisfactory, and no cases of cholera or yellow fever have made their appearance on the Peruvian coast."

Santiago de Cuba.—The sanitary inspector reports, for the week ending February 18th, 3 cases of yellow fever at the military hospital. In the country there are still some cases of small-pox, but they are of a mild character, and are rapidly getting well. The city, he reports, has never shown a better sanitary condition than it has done for the last two or three weeks.

Havana.—One death from yellow fever and 27 from small-pox are reported for the week ending February 18, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM— Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	February 11.	2,260,945	1,131	..	....	13	....	9	6	52
Glasgow	February 11.	545,678	243	..	....	....	....	....	6	3
Warsaw	February 4.	439,174	194	..	....	7	....	....	1	4
Calcutta	January 7.	433,219	307	19	....	....	....	....	....	2
Calcutta	January 14.	433,219	265	32	....	....	....	....	....	....
Amsterdam	February 4.	389,916	182	..	....	....	....	2	....	3
Munich	January 28.	275,000	137	..	....	....	...	1	2	5
Bristol	February 11.	226,510	77	..	....	....	....	....	1	1
Belfast	February 11.	224,422	142	..	...	....	....	1	....	1
Genoa	February 11.	179,370	110	..	....	8	...	....	....	2
Leipsic	February 11.	170,000	67	..	....	...	....	....	3	5
Trieste	February 11.	154,500	128	..	....	5	....	2	1	5
Toronto	February 18.	130,000	25	..	....	....	....	....	....	6
Stuttgart	February 11.	125,510	48	..	..	....	....	...	1	2
Bremen	February 4.	122,000	44	..	....	....	....	1	....	1
Havre	February 11.	112,074	101	..	...	6	....	1	....	....
Barmen	February 11.	109,000	42	..	....	....	1	....	....	....
Leghorn	February 12.	101,444	65	..	....	....	....	....	1	....
Merida	February 22.	48,711	36	..	....	....	....	1	....	....
Cienfuegos	February 13.	35,464	40	..	....	30	....	....	....	....
Cienfuegos	February 20.	35,464	56	..	....	42	....	....	....	....
Guayaquil	January 21.	30,000	69	..	2	10	....	25	....	....
Guayaquil	January 28.	30,000	65	..	3	21	....	17	....	....
Sagua la Grande.	February 11.	15,605	13	..	....	4	...	....	....	....

UNITED STATES.

Vineyard Haven, Mass.—The captain and some of the crew of small-pox infected vessels recently quarantined at Boston had previously been ashore at Vineyard Haven. A supply of vaccine virus has been furnished the medical officer of the Marine-Hospital Service for use at that port.

Red Wing, Minn.—The secretary of the State Board of Health, in a communication relative to newspaper reports of "winter cholera," states that there is "no occasion for alarm. There are lots of diarrhœa and cases of cholera morbus in Minneapolis. A systematic inquiry is now being made, in co-operation with the local board of health."

San Francisco, Cal.—Small-pox Epidemic.—The following are copies of official telegrams relating thereto:

WASHINGTON, D. C., *February 25, 1888.*

Surgeon H. W. SAWTELLE,
Marine-Hospital Service, San Francisco, Cal.:

Applications are being received for aid in small-pox epidemic. Call upon board of health and ascertain what is required.

HAMILTON, *Surgeon-General.*

WASHINGTON, *February 25, 1888.*

SECRETARY STATE BOARD OF HEALTH,
Sacramento, Cal.:

Applications are being received for governmental aid in small-pox epidemic. What do you require?

HAMILTON, *Surgeon-General.*

SACRAMENTO, CAL., *February 25, 1888.*

Small-pox is scattered throughout this State. Suppose other States want the frontier guarded to keep it [small-pox] from getting out by rail.

G. G. TYRRELL, *Secretary California State Board.*

SAN FRANCISCO, CAL., *February 28, 1888.*

San Francisco Board of Health has informed me that no governmental aid is required on account of small-pox epidemic here.

SAWTELLE, *Surgeon, M.-H. S.*

The Roosevelt Hospital.—We learn that Dr. Henry B. Sands has tendered his resignation of the position of surgeon to the hospital, to take effect on the appointment of his successor. We understand that it is only the pressure of Dr. Sands's private engagements that has impelled him to take this step, and that he still takes the utmost interest in the institution, the surgical service of which his labors have done so much to build up.

The Cartwright Lectures.—The Cartwright lectures of the Alumni Association of the College of Physicians and Surgeons, course of 1888, will be given at the college on Thursday evenings, March 29th, April 5th, and April 12th, at 8.30 o'clock, by Professor William H. Welch, of the Johns Hopkins University, on the subject of "The General Pathology of Fever."

ANSWERS TO CORRESPONDENTS.

No. 156.—As we understand it, a conjoint meeting is to be held in September of the present year, and thereafter once in four years.

No. 157.—The last French edition was published in 1870.

No. 158.—We see no objection to the use of such a device, and no *a priori* reason why it should not succeed.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

REPORT OF
TEN CASES OF INTUBATION OF THE LARYNX,
*WITH REMARKS.**

By J. W. PINKHAM, M. D.,
MONTCLAIR, N. J.

When we consider the great prevalence of diphtheria in this vicinity, its great mortality, and the frequency with which diphtheritic laryngitis becomes its most distressing feature, and with its accompanying stenosis—the determining cause of death—any contribution, however humble, to the study of croup and its treatment has its justification in the importance of the subject.

With especial propriety can this statement be made concerning intubation of the larynx, partly because the operation is new and still, in a certain sense, on trial, and partly because the success already achieved furnishes ground for the belief that, when the method is perfected and the best means have been devised for conducting the after-treatment and averting the accidents which are incident to it, it will show results in percentage of recoveries which will demonstrate its superiority to all other methods.

Owing to the impossibility of obtaining statistics of mortality, as well as the impossibility of ascertaining the rules which have been adopted by different tracheotomists in determining the time of operating, we can make no satisfactory comparison at this time between intubation and tracheotomy.

Those who have performed intubation, and have reported their cases, seem all of them to have followed the rule which has been observed by O'Dwyer in all his cases, and have waited before operating until the symptoms became threatening, until it seemed certain that, without relief, a few hours would bring a fatal termination. Following this rule (certainly most unfavorable to a brilliant record), in about one thousand reported cases the recoveries have been nearly thirty per cent. It is certainly reasonable to hope that when a greater number of operators have become more expert, and more efficient means have been devised for averting incidental dangers, this percentage will be greatly increased.

Last April, you will remember, at the monthly meeting of this society, after having practiced intubation on the cadaver under Dr. O'Dwyer, at the New York Foundling Asylum, until I had acquired, in the opinion of that gentleman, a degree of expertness in introducing and removing the tubes sufficient to justify me in operating on the living subject, and having done so on a patient in the practice of Dr. Nolan, of New York, I had the pleasure of giving you an account of my efforts, and of demonstrating the operation on the cadaver in your presence. Since that time, and principally by courtesy of members of this society, I have performed intubation in ten cases of croup, and it is my purpose on this occasion to give you a history of these cases, and to make such remarks on intubation and the general treatment of croup as have been suggested by my recent experiences.

In all operations requiring rapid and gentle manipulation it is difficult for the operator to restrain himself from using force and prolonging his efforts when he finds that he is unable to accomplish his object quickly and easily. In no operation, perhaps, is it more necessary to exercise self-control in these particulars than in that of intubation of the larynx. The exercise of even a moderate amount of force when the tissues are swollen and tender, as they frequently are in croup, is almost sure to do serious if not irreparable damage, and a prolonged effort not only causes great suffering to the patient, but places him in danger of immediate death from suffocation.

Of these things I was fully aware before I was called upon to operate, having had them impressed upon my mind by what I had heard and read, as well as what I had seen; but I had formed no adequate estimate of the degree to which one is tempted, in the zeal of the moment, to overcome obstacles by muscular effort, and to persist in that effort until it is crowned with success—a success which, gained in this way, is infinitely worse than defeat.

I determined, however, at the outset, at any cost of time, and at any risk of seeming to be inexpert, to act in accordance with the maxim, *quickly, without haste, and without force*, and, as a result of this determination, I am able to state this evening that, to the best of my knowledge and belief, I have not injured the throat of any patient by the exhibition of force, nor endangered his life by persisting too long in my efforts. It is, however, somewhat humiliating to confess that I have succeeded only five times out of twelve introductions in placing the tube in the larynx easily and quickly at the first attempt. In one case I failed four times, succeeding on the fifth attempt; in two cases on the fourth, in one on the third, and in three cases on the second trial.

In two of these cases I encountered a great amount of swelling, making the passage to the larynx so small that I found it not an easy thing to pass the tube along the guiding finger, for want of room, and still more difficult to engage the end of the tube in the laryngeal opening.

In one case there was a spasmodically closed epiglottis, causing it to hug the rim of the glottis so closely that I was unable to get my finger behind it until I had made several trials. In two cases I was baffled in my efforts by excessive gagging, which put the throat of the patient into rapid and irregular motion, thus defeating me in my attempts to engage the tube in the opening of the glottis. I have learned that success in easily introducing as well as removing the tube depends to some extent on careful attention to what at first sight might seem small and unimportant details. So small a matter as the selection of a suitable chair for the person who holds the child is important, for it is necessary that the occupant of this chair should sit erect, so that he can hold the child erect, with its feet between his knees. The plainest kind of chair should be provided for this purpose, just high enough to allow its occupant's feet to rest upon the floor. In such a chair, sitting erect, with his head inclined a little to the right to make room for the head of the child, he should hold it, firmly but not forcibly, with its head well above his left shoulder. The assistant, whose duty it is to hold the child's head and keep it in the right position, should stand a short distance behind the chair, and should take the child's head between his hands in such a way that he can prevent any motion of the head, and can steady the gag with the middle finger of his left hand and keep it from slipping forward—a thing, by the way, which it seems very much inclined to do. Any change in the relation of the parts after they have been adjusted should be prevented by this assistant. He should hold the head so that the axis of the mouth is at right angles with the axis of the larynx, and so that the axis of the larynx is at right angles with the floor.

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* Read before the Orange Mountain Medical Society, February 24, 1888.

I will say here that I am dwelling only on the points which I have not seen mentioned by those who have written on the subject. I am not attempting to describe the operation in full, but to point out the stumbling-blocks which have impeded my own way.

The physician called upon to perform intubation generally finds himself in an atmosphere of alarm if not of actual panic; and, as all emotions are more or less contagious, there is danger that his own nervous equilibrium may be disturbed and his muscles become less obedient than usual to the mandates of his will at the very moment when he wishes them to do their best work, if he does not provide against the exhibition of intensely wrought-up feelings in his presence by insisting that all leave the room except those engaged in the operation. After the relatives and sympathizing friends have departed, the gag has been put in place, and the head of the patient is properly adjusted, the child should be allowed a minute or two to recover from its agitation before the operation is commenced. During this time the operator can with great advantage go over in his mind the different steps of the operation. He should also review the position of his patient and correct any errors which he may detect. I have sometimes seen the blanket which is wrapped around the child to restrain its arms and legs brought up around its neck in such thick folds as to constitute an obstacle to the placing and retaining of the gag, especially of the old style of gag. With Denhard's there could hardly be any difficulty from this cause.

I have seen it stated by several writers in medical journals that intubation of the larynx is an operation which may safely be attempted by the general practitioner without previous practice on the cadaver or on animals, provided he makes himself familiar with the use of the instruments. From this opinion I feel compelled to dissent. My small experience forces upon me the conclusion that the general practitioner—unless he possess expertness in manipulative procedures far above the average, and has had positive proof that he can do in many similar operations, without instruction and without practice, what the average man can do safely only after considerable training and education of the sense of touch, or unless he has had such special practice in examining and operating upon the larynx, and has such special knowledge of its anatomy, as may fairly entitle him to the name of laryngologist—would be guilty of reckless and almost criminal daring who should attempt intubation except under circumstances of the utmost urgency, when the alternative would be certain death. His chances of relieving his patient without doing him serious injury would be much better if he resorted to tracheotomy. The process by which I have reached this conclusion I will briefly describe.

During the time that I practiced intubation at the Foundling Asylum I witnessed the early and later attempts of several gentlemen who seemed to possess the average amount of intelligence and the average amount of innate and acquired expertness and dexterity, and I feel confident that my judgment is not blinded by my self-esteem when I say that my early efforts (illustrating my natural dexterity) were as successful as those of my fellow-students, and that I acquired by my practice and study during the six weeks of my tuition a facility in performing intubation on the cadaver equal to that acquired by my fellows. What I mean to assert is this: I was able when I finished my course of lessons to operate as quickly, as safely, as surely, and with as much precision of movement as the average student. These students were not boys whose "*tactus eruditus*" had not yet been developed, but men, apparently in the prime of life and fully up to the times in everything, who had left their fields of labor for the purpose of making themselves familiar with this method of relieving laryngeal stenosis, and who had enjoyed for years all the usual opportunities for developing their manipulative skill. Now, if these opportunities for observing the relative success of different operators in the different stages of their efforts and of comparing their success with my own were sufficient to constitute me a judge of what the general practitioner can do in his first attempts in the dead-house, and of the degree of skill he can attain to by practice on the cadaver, and if the assurances of Dr. O'Dwyer and Dr. Brown to the effect that I was not below the average student in natural aptness nor in acquired skill may be taken at their face value, and if my subsequent experience in operating on the living in cases of croup enables me to form an estimate of the difficulties which the general practitioner encounters in performing intubation in such cases, then the opinion stated above is expressed in language none too emphatic.

Of the ten cases of croup in which I have operated, three presented no symptoms of diphtheria, having commenced like a common cold which developed into a bronchitis. The croup appeared from four to eight days after the commencement of the attack. One of these was that of a boy five years old. The tube gave instant relief to his dyspnœa and he did well for three days, taking food fairly well and making his wants known by whispering. He grew weaker, however, and died on the fourth night, apparently of apnœa. It is a matter of regret that the tube was not removed.

The second patient with ascending croup, a girl of thirteen months, was relieved of all croupy symptoms, but continued to manifest symptoms of bronchitis. When the tube was introduced an attempt had been made to perform tracheotomy, which was abandoned on reaching the thyreoid, leaving the patient in an exhausted condition. The tube remained in for four days, and was removed on account of increasing dyspnœa. There were no symptoms of laryngeal stenosis after the tube was removed, but the patient died seven days after of broncho-pneumonia with marked cerebral symptoms. So far as the croup was concerned the patient recovered. The third case of this group was that of a boy, three years old, who had had symptoms of a cold, with cough, etc., for four days. This patient died in one day after the insertion of the tube, apparently of suffocation.

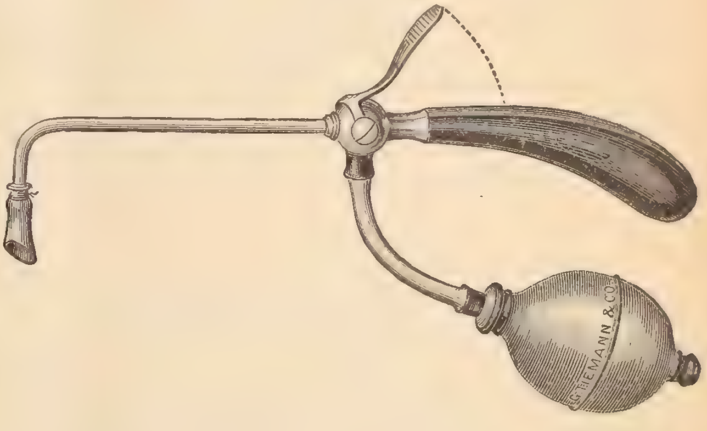
Seven were cases of diphtheritic laryngitis, and two of the patients recovered—viz., a girl of five and a boy of two. The former was a child of poor parents and her surroundings were not favorable. She was recovering apparently from a pharyngeal diphtheria when there was a return of the membrane on the tonsils and uvula, with concomitant invasion of the larynx. Before the introduction of the tube the suffering from dyspnœa was extreme. There was immediate relief, which continued until the end of the sixth day, when the tube was removed. There was no return of croup. Convalescence was, however, retarded by the continuance of the albuminuria which had been a feature of the case, and which was now accompanied by scanty urine and prostration; all bad symptoms, however, disappeared in the course of two or three weeks. This was my fifth case.

My tenth case, up to the time I saw it, had a history exactly similar to the case last described. It was that of a boy, two years and a half old, who had hardly been able to sleep for forty-eight hours, on account of dyspnœa. He was immediately relieved by the tube, and in a few minutes was sound asleep, and continued so for most of the day. He progressed favorably until the commencement of the sixth day, when I removed the tube. It was noticed that the breathing was somewhat embarrassed immediately after the removal, but it was supposed that this would soon disappear, as there was no distinctly croupy element in it.

It rapidly grew worse, however, and at the end of an hour the dyspnœa had become extreme and made the prompt re-insertion of the tube necessary. This relieved him as before, and he retained the tube for fifty-five hours, when he coughed it up. Since that time he has had no signs of croup, and has convalesced rapidly, being at this time, four weeks after the expulsion of the tube, entirely well. This patient also had albuminuria, but it did not complicate convalescence. This child had been treated locally from the start with a solution of mercuric bichloride, and after the introduction of the tube he had it internally as well.

I have used this remedy lately in two other cases of malignant diphtheria, both of which ended in recovery, and I incline, putting my own experience with the reports of others which I have recently seen in the medical papers, to give this remedy the first place among our remedial agents in the treatment of diphtheria.

This patient was fortunate in having for his nurse his own father, a druggist of intelligence, self-reliance, and ingenuity, who on one occasion, when the child was struggling to remove mucus from its throat and was suffering greatly from inability to do so, attached an elastic catheter, properly curved and with its distal end cut off, to a Davidson's syringe and removed what he estimated to be a tablespoonful of mucus, giving the child prompt and entire relief. I had several weeks before this been convinced that accumulation of mucus above the tube often interfered greatly with respiration, and had devised an aspirator which I thought could be used successfully in removing collections from above the tube, and possibly from the tube itself. This instrument is now finished, and, from the tests which I have been able to apply, I think it will accomplish its object very well.



To use the aspirator, press down the trigger and press the air from the rubber bulb to the extent which seems necessary; then let go the trigger, and, with the forefinger of the left hand as a guide, apply the rubber tip of the aspirator to the head of the tube; then hold down the trigger for two or three seconds while the tip is *in situ*, and then, letting go the trigger, remove the instrument. The operation can be done in five or six seconds, and will give slight inconvenience to the patient.

Five other cases of diphtheritic laryngitis terminated fatally. I will not detain you with their detailed histories at this time, but will state that they were all cases of such severity that recovery was not to be expected, although in every case I believe the symptoms were so mitigated by the tube that we, for a time at least, had hope of a favorable termination. In several cases there is reason to regret that the tube was not removed when symptoms of obstruction occurred. I have become impressed with the importance of keeping the tube and the parts above it free from mucus, and recommend that when there are evidences of its presence the patient be prevented from sleeping too long, and that remedies be given which excite cough and which render the secretions less viscid, and hence more easily removed. On account of their tendency to make the mucus of the throat scanty, thick, and adherent, as well as their tendency to create tolerance of its presence in the throat, I think opium and belladonna ought not to be given. These ten cases of croup occurred in the practice of the following physicians in the order of their cases in point of time:

1. Boy, five years old, died four days after intubation—Dr. Graves.

2. Girl, thirteen months old, wore the tube four days; died six days after its removal—Dr. Shelton.

3. Boy, three years old, died twenty-four hours after intubation—Dr. Robinson.

4. Girl, aged ten, died three days after intubation—Dr. Van Wagenen.

5. Girl, five years old, *recovered ;* wore the tube six days —Dr. Shelton.

6. Boy, two years old, died in twenty-four hours after intubation—Dr. Whitehorne.

7. Boy, three years old, died in four days after intubation—Dr. Shelton.

8. Girl, eleven years old, died six hours after intubation —Dr. Pierson.

9. Girl, five years old, died one day after intubation—Dr. Harvey.

10. Boy, two years and a half old, *recovered ;* wore the tube seven days and seven hours—Dr. Love.

SIMPLE AND YET VERY EFFICIENT TREATMENT FOR

DISEASES OF THE KNEE AND ELBOW.*

By V. P. GIBNEY, M. D.,
PROFESSOR OF ORTHOPÆDIC SURGERY IN THE NEW YORK POLYCLINIC,
SURGEON-IN-CHIEF TO THE HOSPITAL FOR THE RUPTURED AND CRIPPLED.

The Knee.—By way of introduction, let me state that I had the opportunity during the past summer of seeing the practice of a surgeon in Liverpool who is generally respected throughout Great Britain for two or three splints he has invented. The simplicity of the apparatus seems to have commended itself to the English surgeons, but this very element seems to have prevented its acceptance in this country. Orthopædic surgeons with us pride themselves on their beautiful appliances; every one seems bent on devising some complicated apparatus that is best used by himself. I confess to a certain degree of pleasure on seeing in some of the London and provincial hospitals the splints of Hugh Owen Thomas in active use. I do not propose this evening to say anything about his hip-splint, but I want to present his knee-splint, which I think serves the purpose for which it was devised. It practically is a perineal crutch with means for fixing the joint. If any gentleman present this evening has any definite ideas about the value of extension of a joint, with preservation of motion at the articular surfaces, I shall be glad to discuss this question with such an one; but if he only relies on what he has heard or what he thinks he has seen, I think it unwise to enter into such a discussion. My plea this evening shall be for absolute immobilization of a diseased joint. I find that surgeons generally are somewhat afraid to advocate this doctrine, however strong their faith may be. It is not fully settled in the minds of surgeons whether ankylosis is the result of immobilization or the result of inflammation. For my own part, I am willing to affirm, without fear of successful contradiction, that ankylosis depends not upon immobilization, however prolonged, but upon the character and the activity of the inflammation, and upon our failure to secure this object in our therapeutics. Rely, therefore, for relief, both from abscess and from deformity, upon fixation of and protection to the joint. The best way of securing these two ends, in my judgment, is to employ the Thomas knee splint, which I now show you. It consists, as you see, of a ring at each end, the top one set obliquely to fit the pelvis. It is not exactly circular, but is wider in the lower portion than in the upper. The lower ring is circular, or it may be elliptical. The stems are made long enough to extend three or four inches beyond the bottom of the foot, and thus the patient is enabled to walk without doing injury to the affected knee. At the same time, by means of leather pads or the ordinary roller bandage, the limb can be secured in position without interfering with the circulation. In cases where deformity exists the correction may be made under ether, or by gradually applied force, the roller being employed for this purpose. The thigh, for instance, can be secured to the upper portion of the splint and a roller can be applied, passing behind the calf and over the rods, while an effort is made to bring the limb into line with the splint. A very good way is to combine these methods—that is, place the patient under ether, extend slowly, and gain what you can with as little risk as possible; then complete the correction by means of the roller, as stated above. I have myself usually employed the splint in connection with the solid plaster-of-Paris bandage, but, from a careful study of Thomas's cases, I can see how the plaster splint might be objectionable. It covers too much surface, including not only the healthy but the diseased area, and it is well known that the object of all splints is to accomplish the end with the minimum amount of infringement upon the sound area.

The first patient I venture to show you this evening is one whom I succeeded in getting under treatment before any serious deformity had arisen, but when there was considerable infiltration about the knee. The result has been very satisfactory, but I have had the usual experience, namely, difficulty in persuading the mother to keep the splint on at all times and under all circumstances. She has now long since appreciated the value of fixation, and I, of course, profit considerably by her intelligent co-operation. The following is an abstract of the case:

A male child, three years of age, brought to my office by Dr. Charles Bliss, on the 26th of May, 1885, had been limping for two months, and this defect of gait followed in the wake of measles. No other exciting cause was known. The left knee was three fourths of an inch larger than its fellow, there was no atrophy of the calf, the inner condyle of the knee and the head of the tibia were much enlarged, and quite tender on pressure. The motion was limited to a small arc, and there was an unusual amount of reflex spasm when motion was attempted. There was no marked deformity, inasmuch as Dr. Bliss had protected him from this by means of a plaster bandage. The patient was placed under my care and I applied a Thomas splint with a two-inch-and-a-half high shoe for the other limb. I also continued the plaster-of-Paris bandage. The little boy soon learned to walk on the apparatus; in fact, he walked fairly well two days after its application. The solid bandage was continued until the 4th of March, 1886, ten months in all, at which time there were 53° range of motion. The contour of the knee had altered considerably in this time, and the patient seemed convalescent.

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* Read before the New York Clinical Society, October 28, 1887.

A few days after the removal of the bandage he strained his knee at night, and I found it necessary to apply another. About the 1st of June the condition had improved so much that I removed the plaster altogether, and he went into the country. At the end of three weeks, however, he came back with considerable swelling at the knee. The bone seemed also enlarged and the veins were rather prominent. He could extend quite easily to 170° and could flex to 120°. Still, reflex spasm was excited when this point was reached. I found it necessary to reapply the plaster, and he continued wearing this until a few months ago, when I again removed it, and, finding no infiltration about the knee, finding the joint free from tenderness and without extra heat, encouraged him to employ voluntary motion. The splint was still continued by day. After trying him for about three or four weeks, I found more resistance to extension, and I made him a plaster splint to be worn at night.

In this case, if I had employed a roller, I might have secured immobility quite as well as I did with the plaster; still, the roller is easily removed, and is in this respect inferior to the plaster. The splint has been converted into a caliper splint by bending the distal extremities on the stems at a right angle. The point of bending is about an inch and a half from the lower extremity. These pointed ends then fit into a tube which is fastened in the shank of the shoe. Mr. Thomas inserts the tube through the heel, very near the shank.

The treatment is not complete, and the question may naturally arise as to when the splint can be dispensed with. This, of course, depends upon the soundness of the joint, and I find myself in hearty accord with Mr. Thomas on this point, that the joint is sound (after a prolonged rest) if it will stand the test of a month's use. By this I mean that the patient should go without the apparatus and use the limb for this period. If it is found that the stiffness, not *ankylosis*, yields during this period, we can rest assured that the joint is quite sound. Let me elaborate a little more on this point. When, it may be asked, can we begin this testing? I would answer: After subsidence of infiltration, heat, tenderness, and pain in the joint, the patient himself shows a certain confidence in moving the joint under the surgeon's eye, then the testing may be made. Usually a splint should be worn from one to three years, according to the condition of the limb when the patient comes under treatment.

The second patient is one who came under my treatment quite early in the course of the disease. I felt sure of my diagnosis, and succeeded in convincing the parents that I was correct, although there were few signs present. I found his mother quite intelligent in this matter. His history, which I now give, will show upon what points I made my diagnosis:

A patient ten years and a half of age came under my observation in November, 1885. The history the mother gave was as follows: Four years previous to this time there was a little stiffness about the right knee. Nothing was discovered on examination, and he had no symptoms that were noted until a week prior to my first observation. About this time he began to walk lame, his knee became stiff, and I found that he could flex the left knee to 40°, the right to only 90°. He could extend the left to 195°, the right to 175°. There was some fullness about the ligamentum patellæ, and there was bony tenderness about the head of the patella. The patella was movable over nearly the entire normal area. There was little extra heat. The thigh was an inch and a half smaller than its fellow, the knee half an inch larger, and the calf half an inch smaller. Upon the foregoing I made a diagnosis of ostitis of the knee. He wore the Thomas splint with the high shoe for nearly a year. The knee was also immobilized in plaster of Paris. During the past winter the caliper was substituted for the long splint, and the plaster of Paris was discontinued. Early in April of the present year all appliances were removed, and, while there was a little stiffness left, this had about disappeared and he could walk without lameness. Almost the only sign now present is a bony enlargement about the knee. He can use the limb very well, and the result is fully as much as I expected—viz., perfect restoration of function.

The third case is one where abscess had already formed, and is also presented this evening as an illustration of the treatment here employed. The result you can see for yourselves.

A female patient, about three years of age, came under observation on May 19, 1885. The joint and immediate surrounding structures were apparently free from any disease. She had been limping, however, for about six or eight weeks, and without any apparent cause. Signs of an abscess had appeared about this time. I found evidently a periosteal abscess which had reached fair proportions. This case seemed to be one of osteo-periostitis of the tibia. It seemed to be peculiarly suited for operation. On the following day the abscess was freely opened, thoroughly scraped, and put up in plaster of Paris. A Thomas splint was ordered, though not as yet applied. She was to be kept in bed until this could be ready for use. We had some difficulty in getting her to walk with the apparatus, and toward the latter part of November I learned that she had worn it but very little; it was too long in the first place, the ring was not suitable (so the mother stated), and hence it was not used, so that she relied simply upon the plaster-of-Paris bandage and went about as usual. The sinus at this time was still open. This was a Polyclinic patient, and I was so convinced that she could get relief if the splint was employed that I devoted personal attention to her case, had her come to my office, and had the splint altered. Finally it was satisfactory, but about this time it was found that the disease had involved the knee joint, and she presented the usual signs of tubercular ostitis. It was quite evident then that this case belonged to that class wherein the joint is involved subsequent to the bone. The treatment has been continued uninterruptedly to the present time, although the plaster splint has long since been dispensed with. The lesion in the knee has apparently undergone resolution and her joint is quite free; motion is not perfect, but it is improving all the time, and it is gratifying now to report this excellent result.

Take, now, an adult, a patient twenty-two years of age at the time when I saw him. He told me that when sixteen years of age he developed disease of the knee joint. Sixteen months later he came under the care of Mr. Thomas, in Liverpool. He remained in his hospital five weeks. There was much fluid in the joint, and aspiration was made with the result of removing about half a pint of pus. Two weeks later another aspiration was made, and again at the end of another two weeks a third. An abscess had already formed on the outer side of the thigh. The splint at first was extended three or four inches below the bottom of the foot. The details of the treatment are not pertinent to the case specially, inasmuch as they were given by the patient. When I saw him on the 22d of November, 1884, he was wearing the caliper splint, the knee was perfectly straight, and there was motion over a small arc; the patella was movable over nearly the normal area. There was no pain or tenderness. A cicatrix on the posterior and outer aspect of the thigh was prominent. He went to the far West and I did not see him again until March, 1885, the arc of motion having increased to all appearances. There was some grating in the joint as he moved it. On the 25th of June, 1887, he called again with the report that he had left off the splint about a year previously. He walked with a trace of lameness. Some people, he said, were scarcely able to detect it. He is a good runner and is somewhat of a gymnast. He can flex his knee to 90° without any difficulty; can extend fully. What little tenderness he had seems to have disappeared.

The Elbow.—A very simple method of treating diseases of the elbow is to put the forearm in a sling, approximating the wrist as closely to the neck as possible. This constitutes simply a flexing of the forearm as much as possible, and in this way a fixation is secured that is very nearly perfect. Under no circumstances must the arm be taken down except in the presence of the surgeon, and it is done then merely to test the condition of the joint. This can be accomplished, however, without taking the sling down, by palpation, by the appearances of the parts, and by the presence or absence of infiltration. The time it is kept in this position is usually about two or three months. An ordinary roller bandage of flannel is employed, and this is knotted so that it can not be removed without the knowledge of the surgeon. This is also a method that I saw practiced by Mr. Thomas, of Liverpool, and his custom was to seal the knot. I, of course, have no experience other than what I learned by observation. The patients whom I had the opportunity of seeing under this treatment were free from pain and the joints were quite easily handled. I confess I was favorably impressed not only by the simplicity but by the efficiency of the method. I saw Mr. Thomas put a few elbows up in this manner, and his remark was, "Come back to see me in a week" in some instances, "two months" in others. I saw quite a number of his patients who were already under this treatment, and they had become accustomed to the position. The question naturally arose in my mind, Is not this a very awkward position in which to have an ankylosed elbow? But I was assured that, if ankylosis was desirable, the hand need not be put so near the neck. I had an opportunity of examining the elbows in one or two patients who had been under treatment for two or three months. I found, to my surprise, that there was considerable motion present, and I was assured that as soon as the joint became sound this motion would increase. I have considerable hesitation, however, in presenting you this treatment, because I can not give you any personal experience. I merely present this portion as a point worth investigating.

Note.—Since presenting these remarks I have received from Mr. Thomas a volume recently published by him entitled "Fractures, Dislocations, Diseases, and Deformities of the Bones of the Trunk and Upper Extremities," H. K. Lewis, 136 Gower Street, London. In this volume I find the subject of elbow-joint diseases and deformity very fully discussed. The methods of correcting deformity are given in full, and I am quite sure it will repay any one to study this volume quite closely.

URETHRAL CARUNCLE, ETC.

By FREDERICK A. CASTLE, M. D.

I am led to offer the following comments on the subject of urethral caruncle, because it seems to me that the malady is much more common than Dr. J. G. Perry's experience, as expressed in his paper of March 3d, would indicate, and because I think that its nature may be more readily understood by comparison with a similar affection of another mucous outlet.

The reason why Dr. Perry has observed but one noticeable case during his long service in the Woman's Hospital may be due to the practice (in vogue in the hospital) of ex-examining most patients by Sims's method, which favors emptying the urethral veins. In the Out-door Department of Bellevue Hospital—where examination in Sims's position was the exception, owing to the absence of an attendant capable of holding the speculum, and where the dorsal or knee-chest position was necessarily resorted to—I do not remember to have failed to demonstrate the existence of urethral caruncle to students in numerous cases. In most cases the caruncle is nothing else than a varicose condition of the veins of the urethra, and closely resembles enlargement of the veins of the anal region. They are, in fact, *urethral piles*, and, like anal hæmorrhoids, commonly exist in moderate degree without causing much discomfort. When, however, conditions are present which cause them to become overdistended with blood or produce inflammation, they then, like anal piles, cause more or less suffering, and give rise to symptoms which closely resemble those attending an attack of anal piles, as illustrated by the first case quoted by Dr. Perry.

A smaller percentage of caruncles are of the nature of mucous polypus, and resemble the polypoid growths not uncommonly occurring in the anal mucous membrane of children or in the nasal passages.

The principles of treatment which relate to anal hæmorrhoids are in all particulars applicable to urethral hæmorrhoids, and in my experience equally successful.

In this connection I should like to speak of something which will help to illustrate the frequency of this trouble, and at the same time mention a method for avoiding one source of discomfort caused by it. In catheterizing female patients it quite often happens that they complain of great and sudden pain while the catheter is being withdrawn, and the operation is followed by the escape of a few drops or more of blood. This is most likely to occur when the silver pocket-case catheter is used, which has a comparatively large fenestra with pretty sharp edges. It is caused by the prolapse of one of these vascular growths through the fenestra, and the injury which results from force used to withdraw the instrument. When this happens, cease at once any attempt to withdraw the catheter and insert the small nozzle of a syringe into the outer extremity. By filling the catheter then with water, the caruncle will be dislodged and the instrument can be withdrawn at once and without further pain. To prevent this accident after emptying the bladder of a pregnant or parturient woman (who generally presents a condition of venous engorgement of the urethra), I invariably place the end of the forefinger of the hand holding the catheter over the outlet while the last portion of urine is still escaping, and before commencing to withdraw it from the bladder. This insures the lumen of the catheter being full of urine, and prevents the entrance of a caruncle. I then hold the fenestrated end over the receptacle for the urine, while removing the forefinger, and allow the instrument to empty itself.

There is another advantage attending this little manœuvre. It is generally recognized that if air gains admission to a bladder whose mucous membrane is irritable, catarrh is very apt to result, and that the onset of many cases of cystitis is coincident with the use of a catheter. Now, what occurs when a bladder is allowed to completely empty itself through a catheter, and the instrument is withdrawn without the precaution of closing the outlet? The act of withdrawing the instrument is like pulling upon the piston of a pump, and a vacuum is created which is filled by the entrance of air through the catheter. Unless this air is aseptic (a condition which is hardly likely to be the case in the puerperal bed) we have all the conditions requisite for awakening an attack of cystitis.

55 East Fifty-second Street, New York, *March 3, 1888.*

NOTE ON THE PHYSIOLOGY OF THE RECURRENT LARYNGEAL NERVES.

From the Physiological Institute of the University of Berlin.

By FRANK DONALDSON, Jr., B. A., M. D.,
BALTIMORE, MD.

In my original article on the function of the recurrent laryngeal nerve, read before the American Laryngological Association in May, 1886, will be found these two statements, viz.:

"That it is with weak stimuli only (without ether) that abduction of the vocal cords takes place, which movement of abduction gradually passes into one of adduction as the strength of the stimulus is increased," and "*that the rate of stimulation does not affect the general result.*"

After many times contradicting my statement of this perfectly evident physiological fact, Dr. Franklin H. Hooper, of Boston, comes out in the "New York Medical Journal" for November 26, 1887, and says:

"Slow rates of stimulation (eighteen to twenty-eight a second), with *weak* currents, *produce opening*" [of the glottis.]

"By increasing the rates (thirty to forty a second), the intensity remaining the same, closing is called forth," and

"Rapid rates, with weak or strong currents, produce closing." And so he concludes: "I feel inclined to suspect that the reason other observers have obtained dilatation with feeble currents is to be found in the slow rate of vibration they have used."

This, however, is plainly not the case. In the first place, the various Du Bois-Reymond induction coils which I used in the course of my experiments, extending over eighteen months, did not all beat between eighteen and twenty-eight a second; and, in the second place, as I stated above, I found that the rate of stimulation, with as slow and rapid rates as could be obtained from such a coil, did not affect the *general* result.

I have lately, however, performed some experiments on this point in the Physiological Institute here, with the kind help of my friend, Professor Sad. We measured the exact rates—slowest and highest—which could be obtained from two Du Bois-Reymond induction coils. We first used a coil of which the slowest rate was twenty a second and the highest forty, and with these rates we *invariably* obtained *abduction* with *weak* currents. The second coil had a slowest rate of forty a second and a highest of eighty,* and with this also we obtained the *same result*, but with this difference: with very rapid rates the abductor fibers are soon exhausted, and abduction quickly gives place to adduction. For, as is well known, the abductor fibers are very prone to exhaustion, and the stimulus from a Du Bois-Reymond coil is the most exhausting we can use.

Finally, there is a slight difference between the effect of the slow and rapid stimuli upon the opening of the larynx, but it is only one of degree, in that, while with very rapid rates perfectly distinct abduction can be obtained, such rates sooner exhaust the abductor fibers, and we have, on stimulation, only adduction. And from these later experiments I can confidently reassert my *original* statement, "that the rate of stimulation does not affect the general result." Under all rates, up to at least one hundred and twenty a second, weak currents produce opening of the larynx.

Berlin, *February, 1888.*

Correspondence.

LETTER FROM LONDON.

The New University for London.—Medical Advertising.—The Operative Treatment of Relapsing Typhlitis.—A Curious Defense in a Divorce Suit.

London, *February 21, 1888.*

The agitation in regard to a new and real university for London has probably now reached its height, and the various petitions are now before the Privy Council. It seems in the highest degree improbable that any of them will be acceded to until a Royal Commission has been appointed and has made a report; that is to say, it is almost certain that nothing will be done for at least three years, as a Royal Commission is a cumbrous machine, and takes a long time to make its inquiries and formulate its conclusions. The scheme that is considered to be most deserving of approbation at present is that of the University and King's Colleges, as they have already established and have more or less in working order several faculties besides those of medicine, but I hope that in the new university those two bodies will not, as regards their medical faculties, be given any advantages over the other hospitals, for, so far as I can see, they do not deserve it. Meanwhile the unfortunate London students are without a degree in medicine obtainable on reasonable terms.

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* In both these coils the hammer showed double these numbers of *oscillations*, but we could not be certain that the nerve received the same number of stimulations, so we have only reckoned on half the number of stimuli in a second—that is, a stimulus *either* on the make *or* on the break of the contact.

The College of Physicians is reported to have devoted two meetings lately to passing a resolution condemnatory of advertising on the part of its members, fellows, or licentiates. I should have thought that such a resolution was superfluous, the respectable portion of the profession having long been of the opinion that to advertise is undignified and unprofessional; and a mild resolution of this kind will not have a deterrent effect upon the minority who do not think with the rest of their professional brethren. Moreover, it raises the question as to what an advertisement is. I have never seen any really comprehensive definition of this word, for it is quite clear that what would be an advertisement for one man would not be one for another. For instance, a new-comer might put a card into the local papers announcing that he had taken up his abode and intended to practice at such and such an address. This, though the custom in some of our colonies, would be a heinous offense here, and yet all the daily papers may announce that Sir William Jenner was sent for to see some magnate or other, or Dr. Matthews Duncan may sign a bulletin to the effect that a princess has been safely confined of a baby, without the conscience of the Board of Censors at the College of Physicians being in the least perturbed, although such public announcements are nothing more nor less than first-rate advertisements for the practitioners in question. I think it is a mistake for any set of people to pass a resolution when they can not give a clear definition of what is meant. In this particular instance it rather savors of making one law for the rich, etc.

Abdominal surgery had a great innings at our societies last week, the two chief ones—viz., the Medico-chirurgical and the Clinical—each giving up a whole evening to it. At the former a paper by Mr. Treves, on "The Operative Treatment of Relapsing Typhlitis," monopolized the evening. He held that in the majority of cases of so-called typhlitis the appendix was the cause of the trouble and the perityphlitic abscess was more usually an encysted peritonitis, due to perforation of this process, than to disease in the cæcum. The appendix might become the starting-point of inflammation by reason of congenital deformities, of changes that took place in its mesentery producing bending, or of the lodging of foreign bodies or concretions that remained unmoved on account of the feeble muscular coat of the tube. This source of manifold disturbance could be destroyed by removal of the appendix or by correcting any simple deformity of which it was the seat. The papers at the Clinical Society dealt with the diagnosis and treatment of ruptured intestine without an external wound, and with laparotomy for intestinal obstruction, of which several interesting cases were narrated.

A curious and, I believe, in this country, unique, case was heard in the divorce courts last week. The lady, from whom her husband sought a divorce on the ground of adultery, did not deny it, but pleaded that at the time of the adultery she was insane and therefore not responsible. I believe a similar line of defense has once been raised in America, but I think I am right in stating that it has not before been raised here. It was shown that the husband and wife had been separated for some time on account of repeated outbreaks of mania on her part, that he had charge of the children, that he had done all in his power to have his wife taken care of, and, further, that in every step he had consulted and followed the wishes of her own parents. The jury found without hesitation for a divorce.

THE
NEW YORK MEDICAL JOURNAL.
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MARCH 17, 1888.

THE ÆTIOLOGY OF CEREBRO-SPINAL MENINGITIS.

With the establishment of the general principle that suppuration is always due to the action of micro-organisms, and with the demonstration of the causal relations existing between bacteria and a large series of infectious diseases, the ætiology of epidemic cerebro-spinal meningitis naturally presented itself for investigation. The observations thus far made, although rather numerous, have not afforded any satisfactory solution of the questions involved, probably because of the comparatively few opportunities that are presented for the investigation of such cases. In reviewing the recent literature bearing upon the ætiology of cerebro-spinal meningitis, if we exclude those cases in which the disease has occurred as a secondary complication in the course of various other infectious diseases, such as pneumonia, puerperal fever, ulcerative endocarditis, otitis media, etc., and in which the same micro-organism was found as in the original disease, we find that there are but few observations as to the bacteria present in idiopathic uncomplicated cases of this affection.

Fränkel, Foa and Bordoni-Uffreduzzi, and Weichselbaum have all succeeded in obtaining pure cultivations of Fränkel's pneumococcus in a series of cases of primary cerebro-spinal meningitis. They have also succeeded in producing an experimental meningitis by the injection of these cultivations under the dura mater of animals after previous trephining. Weichselbaum alone has described a new form of bacterium, which he has found in six cases of idiopathic cerebro-spinal meningitis, and with cultivations of which he has also produced an experimental meningitis in animals.

In a recent number of the "Centralblatt für Bakteriologie und Parasitenkunde," Dr. F. Goldschmidt reports the results of his observations in one case of this disease. The patient was a child, four months of age, who presented symptoms of hydrocephalus internus in addition to those of cerebro-spinal meningitis. The patient died after eight days' sickness, and in every respect the autopsy confirmed the clinical diagnosis—that of cerebro-spinal meningitis with internal hydrocephalus. A purulent exudation was present on the convexity, most marked along the large vessels and at the base, thickest between the pons and the infundibulum. The exudation was also present over the cerebellum, and extended down in the dural sac of the spinal cord. The ventricles were enormously dilated and filled with a cloudy fluid. The other organs were perfectly normal.

Goldschmidt naturally expected to find, in this case, Fränkel's pneumococcus, as no other organism had been described, except in Weichselbaum's cases. He therefore prepared his cultivations according to Fränkel's directions for such cases. Inoculations were made upon agar-agar cultivation plates with a platinum wire, by drawing fine lines upon the surface of the agar-agar after introducing it at different points into the purulent exudation. The cultivations were placed in a cultivation oven at 35° C. On the following morning, along most of these lines of inoculation a gray-white growth was apparent, which was microscopically found to be made up of diplococci. No other organism was apparent, and none developed subsequently; so that proof was at once afforded of the presence of this single form of bacterium in the meningeal pus. In microscopical preparations of the pus and in sections of the brain, the cocci appeared to be few in number. In part they were free and in part they were inclosed in pus-cells. Upon further examination, this coccus was found to be almost completely identical with the coccus found by Weichselbaum for the first time in cerebro-spinal meningitis. It had not been previously described.

This organism does not grow well at the ordinary temperature of a room, or at a temperature of 15° or 20° C. At this temperature, in beef-peptone-gelatin cultivations, after many days, a small gray-white point is apparent on the surface that shows no tendency to extend into the neighborhood or along the line of inoculation. The coccus develops best on agar-agar in the cultivation oven at a temperature of 35° or 40° C. After twenty-four hours the cultivations appear as gray-white lines, about 2 mm. broad, and have a slightly elevated border. They are very viscid. In puncture-cultivations the growth is on the surface; along the line of inoculation there is only a slight cloudiness apparent. At the brood-oven temperature growth also occurs on potatoes and gelatin. In this alone does the history of the organism differ from that described by Weichselbaum, but probably this difference was due to the fact that his cultivations were kept at the temperature of the room.

Goldschmidt observed, as Weichselbaum had also found, that the cultivations very soon lost their vitality, and that, when transfers were made, the inoculated tubes remained sterile. The transfers are best made after from one to three days; then an abundant growth is obtained. After the third day the inoculated colonies are always smaller, and after eight days transfers can no longer be made.

Microscopically, the cultivations are composed of cocci which for the most part are joined in pairs, forming diplococci. They are round, except when they lie together as diplococci, and they are sometimes flattened on their adjoining sides. There is a distinct space between them, equal to about one third the diameter of a single coccus. They show no motion in the hanging drop. They are easily stained with all the aniline dyes, but are decolorized by the Gram and modified Weigert staining methods. This organism belongs to the obligatory aerobic bacteria, for, after the exclusion of oxygen, even at the temperature of the brood-oven, no growth appears.

Inoculation experiments were made only upon white mice. Subcutaneous injections produced no result. After injections of cultivations into the pleural or the peritoneal cavity, the animals died in from twenty-four to forty-eight hours, according to the amount injected. For the first hour or two the animals remain perfectly well, but soon they huddle together and become quiet, the respirations are more frequent, the head droops, and the eyes are closed. Presently the hind limbs are extended, all movement becomes impossible, and death follows. At the autopsy a cloudy, viscid exudation is found in both pleural cavities and in the peritoneal cavity, and there is an acute enlargement of the spleen. In the microscopical examination many diplococci were found in all the organs and in the exudation in the pleura and peritonæum. The distribution of the organisms varied in different cases, according to whether the animal had withstood their action a longer or a shorter time. In the former case many diplococci were found inclosed in the cells, several organisms being contained in a single cell, and an appearance like that produced by the gonococcus was presented. When the animals succumbed quickly to the infection, the exudation contained but few cells, and fewer cocci were present in them.

This observation of Goldschmidt's is interesting as confirmatory, so far as it goes, of the important function of the white blood-corpuscles in the production of immunity. Editorial reference was made to this in our issue for August 27th, in connection with the work of J. von Christmas-Dircknick-Holmfeld. There seems to be but little doubt that there exists a constant relation, as regards several of the infectious diseases certainly, between the amount of suppuration and the degree of immunity that different animals show to the respective diseases. The greater the emigration of leucocytes the greater is the insusceptibility, and *vice versa*, the leucocytes apparently destroying or counteracting the effects of the micro-organism. Suppuration thus comes to be a conservative process, protecting the system from the action or entrance of the microbes. Perhaps this is always its function. Dr. Biggs, of New York, found in one case of uncomplicated cerebro-spinal meningitis an organism corresponding very closely to this one described by Weichselbaum and Goldschmidt, and it is probably identical with it.

Goldschmidt, concluding his paper, says: There is presented here a diplococcus that in its morphological and biological characteristics appears to be almost identical with one found by Weichselbaum in six uncomplicated cases of cerebro-spinal meningitis. This organism, because of its peculiar and characteristic arrangement in the pus-cells, may be called *Diplococcus intracellularis meningitidis*. Weichselbaum has employed it for the inoculation of rabbits and has produced a meningitis in them. Three of these animals were inoculated underneath the dura after trephining. One died, and at the autopsy a spot of softening was found which contained large numbers of the diplococci. He also succeeded in producing in dogs in one case cerebral softening, and in two cases an inflammation of the dura and pia.

Too much importance should not be attached to the results obtained from experimental inoculations, as a meningitis or an encephalitis may be produced by other organisms, and especially the pyogenetic germs, in the subdural or intracerebral injection of cultivations. Goldschmidt concludes, with Weichselbaum, that, when this coccus is found in the meningeal exudation in cerebro-spinal meningitis, it bears an essential ætiological relation to the disease.

MINOR PARAGRAPHS.

THE ACADEMY OF MEDICINE.

In pursuance of the movement to acquire a sufficient fund to provide the Academy with a new building suitable for the purposes of its meetings and its library, the committee on subscriptions have prepared a circular for the information of persons from whom contributions to the fund may be hoped for. They ask the Fellows of the Academy for the names and addresses of such persons, in order that they may send them copies of the circular, and they announce their willingness also to supply the Fellows with copies which they can send out themselves. This seems a thorough plan of work, and we hope that it will result in substantial additions to the building fund, which is already gratifyingly large.

A NEW SPECIALTY.

The latest specialty—so far as the delay in the mails admits of our knowing—is stomatology. According to the "Union médicale," a *Société de stomatologie* has been founded in Paris, having for its object the study of disease of the mouth, the dental apparatus, and their annexa. We presume the time is not far distant when those who devote their energies to these annexa will think it incumbent on them to subdivide stomatology, and we may even see a parotid society, a submaxillary society, a sublingual society, and a society for diseases of the frenum linguæ or for herpes labialis. There seems hardly any limit to the possibilities in this direction.

THE STORM.

It is to be feared that the phenomenally severe storm of wind and snow that raged in this part of the country all day on Monday must have been productive of more serious consequences than temporary suffering. For at least twenty-four hours locomotion was practically impossible for most persons, and many a physician must have found himself absolutely prevented from visiting patients, no matter how urgent their needs may have been; and great distress, if not serious risk, was doubtless caused in many instances of sudden sickness, or the aggravation of illness already in progress, by the sheer impossibility of communicating with the family physician. It would be difficult to mention an industry which has not been seriously crippled by the protracted interruption of railway, telegraphic, telephonic, and other means of communication. It has interfered materially with the preparation of this issue of the journal, and we trust that our readers will take that fact into account if the number fails to reach them at the usual time.

ITEMS, ETC.

The Bellevue Hospital Medical College held its twenty-seventh annual commencement exercises at the Carnegie Laboratory on Monday afternoon, the 12th inst., when a class of one hundred and forty-four was graduated. Dr. David H. Williams, Jr., Dr. David H. McAlpin, Jr., and Dr. Lawrence Litchfield, who were among the honor men, were declared appointed on the house staff of the hospital.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 13, 1888:

DISEASES.	Week ending Mar. 6.		Week ending Mar. 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	8	4	4	0
Scarlet fever	151	24	144	18
Cerebro-spinal meningitis	8	5	6	5
Measles	65	2	57	3
Diphtheria	149	36	115	42
Small-pox	14	0	13	1

The late Professor Austin Flint.—Last Saturday evening the memorial tablet to the late Professor Austin Flint erected in the Carnegie Laboratory by the Alumni Association of the Bellevue Hospital Medical College was unveiled with appropriate ceremonies. A eulogy of Dr. Flint was read by Dr. Leroy Milton Yale.

The President of the City Board of Health.—It is announced that Mr. Bayles, the president of the Board of Health of the Health Department, has received a diploma of honor for designs for sanitary works submitted at the International Health Exhibition held in London in 1884.

The Long Island College Hospital held its twenty-ninth annual commencement exercises in the Brooklyn Academy of Music on Friday evening, the 9th inst., when a class of thirty-six was graduated. Dr. George Wagner White was the valedictorian.

Dr. D. Hayes Agnew, of Philadelphia, it is announced, will be tendered a reception by the Medical Faculty and students of the University of Pennsylvania on April 25th, when he will have been for fifty years a member of the medical profession.

The Obstetrical Society of Philadelphia.—At the meeting of March 1st, Dr. W. H. H. Githens, who had resigned the secretaryship at the beginning of the year, after having held it continously for eleven years, was presented, in the name of the society, with a very handsome mantel set, including a clock and side ornaments, in recognition of the very valuable services he had rendered during his long term of office. The officers for the current year are as follows: President, Dr. Thomas M. Drysdale; vice-presidents, Dr. Charles H. Thomas and Dr. J. C. Da Costa; secretary, Dr. J. M. Baldy; treasurer, Dr. Alfred Whelan; curator, Dr. T. Hewson Bradford.

The Society of the Alumni of Bellevue Hospital.—The first annual address before the society will be delivered at the Academy of Medicine on Wednesday evening, April 4th, at 8.30 o'clock (the regular time for the April meeting), by Dr. William T. Councilman, of Baltimore, associate professor of pathology in the Johns Hopkins University, on the subject of "Predisposition in Tuberculosis." Members of the profession are cordially invited to be present.

The Execution of Criminals.—At a meeting of the Medico-legal Society, held on Wednesday, the 14th inst., the committee appointed to investigate the question of the most humane method of inflicting the death penalty, reported in favor of the abolition of hanging and the employment of electricity, or of some poison hypodermically administered. It was also recommended that executions be private, that the details be not made public, and that the criminal's body be given to some medical college.

Instantaneous Photography, with the help of the "flash light," is now employed for the purpose of obtaining exact representations of anatomical demonstrations. A dissection is made and the parts are photographed while they are in a fresh condition. In this way pictures are obtained that are marvels of fidelity. The illustrations in Dr. Gerster's "Rules of Aseptic and Antiseptic Surgery" are principally from photographs taken in the operating-room, and are the first of their kind to be used in illustrating a medical work.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 4 to March 10, 1888:*

Fisher, W. W., First Lieutenant and Assistant Surgeon. Sick leave extended one month on surgeon's certificate of disability. S. O. 50, A. G. O., March 2, 1888.

Shillock, Paul, First Lieutenant and Assistant Surgeon (recently appointed). Ordered for duty at Fort Assiniboine, Montana. S. O. 50, A. G. O., March 2, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 1, 1888:*

Stone, E. P., Assistant Surgeon. Detached from the Coast Survey Steamer Bache and ordered to Hospital, New York, for treatment.

Keeney, James F., Assistant Surgeon. Commissioned March 1, 1888.

Brush, George R., Surgeon. Ordered to the Omaha when the Pensacola arrives at Aspinwall.

Means, Victor C. B., Passed Assistant Surgeon. Ordered to the Omaha when the Pensacola arrives at Aspinwall.

Society Meetings for the Coming Week:

Monday, *March 19th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *March 20th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings; Ogdensburg, N. Y., Medical Association.

Wednesday, *March 21st:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Medical Society of the County of Alleghany (quarterly), N. Y.; New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society (clinico-pathological).

Thursday, *March 22d:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *March 23d:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *March 24th:* New York Medical and Surgical Society (private).

OBITUARY NOTES.

Frederick R. S. Drake, M. D., died on Friday, the 9th inst., after a short illness, at the age of forty-three years. He was a native of Connecticut. He obtained his medical degree from the Medical Department of the University of the City of New York in 1871. Dr. Drake was one of the physicians to Bellevue Hospital and a member of the Academy of Medicine, of the Medical Society of the County of New York, and of the Pathological Society. He was a busy and much-respected practitioner.

Edward Livingston Shaffer, M. D., died on Monday, the 12th inst., after a brief illness. He was a brother of Dr. Newton M. Shaffer, and was a physician of much promise.

Willis W. French, M. D., a native of New Hampshire and a graduate of Bowdoin College, died on Sunday, the 11th inst., after a short illness. He obtained his medical degree from the College of Physicians and Surgeons in 1883. He had been in practice in New York since 1886.

Letters to the Editor.

INSUFFICIENCY OF THE OCULAR MUSCLES.

130 Lexington Avenue, *March 13, 1888.*

To the Editor of the New York Medical Journal:

Sir: In sending you my paper on "Hyperphoria" I did not hope to arouse any discussion as to who was the first to describe and treat the condition known as hyperphoria. It seemed to me that a philosophical discussion of the condition was not malapropos. It will be distinctly observed by reading my paper that I wrote: "*It seems* [Italics recent] that Dr. George T. Stevens was the first to describe the condition known as hyperphoria." After having read the discussion of this question in other columns, I confess myself as having been left in a condition of indecision as to who deserved the credit of priority in the matter. It was in this condition of uncertainty, and on account of it, that I wrote the fatal words *it seems.* If the distinguished gentlemen who have participated in this controversy can not settle it, nobody can. I have no desire to enter the discussion. Dr. Derby's object is unquestionably to give credit to whom credit is due. This is a sentiment with which I am in full accord, and I should not be willing to give credit to whom credit was not due or to detract from the glory of the illustrious von Graefe and his successors. Dr. Derby has seen fit to criticise me because, as he says, I have claimed for the subject of my article "the distinction of its being a recent discovery." In view of the indefiniteness of my words I hardly think I can be said to have made such a claim. I should have used unequivocal words had I intended to state an unquestioned fact. In order, therefore, that opinion may be unanimous on this point, I distinctly state that I do not make any such claim.

Dr. Derby's reference to the work done in von Graefe's clinic in 1869 seems to me to settle the question of priority in the treatment of *insufficiencies* of the vertical straight muscles of the eye. Dr. Derby refers to a case in which he himself prescribed a prism of 4° base downward for insufficiency of one of the inferior recti muscles.

In my own experience, which is not patriarchal, I have only treated cases of *paresis* of one of the vertical straight muscles. I have rarely found the power of these muscles to be as much as 4°. Assuming that this is the *total power* of such muscles in health, if I should find a case in which one of these muscles presented as much as 4° of *insufficiency*, I should be inclined to put that case in the territory at least of paresis. Surely, however, this is a matter of opinion. If there has been any separate and distinct treatise on this subject before Dr. Stevens's I am unacquainted with it. The recording of cases of insufficiency need not involve a systematic description of the condition nor of the method of procedure in examination; but, if Dr. Derby can point to such a treatise, he will settle this point also.

In my article I wrote: "Why, then, may not a latent insufficiency or overtension in one of these muscles [*i. e.*, the superior or inferior rectus] exist, as is known to be the case in the lateral straight muscles; and, if it exists, why may it also not cause symptoms of asthenopia?" I have incurred criticism on this point, I presume, not on account of any improbability in the suggestion therein contained, but on account of its apparent triteness. In answer here I would say that, strange as it may seem, I have not infrequently heard it doubted whether any such condition as hyperphoria existed. This innocent piece of reasoning was, therefore, not intended for the edification of experts, but was written expressly for those who were inclined to doubt the existence of such a condition, and for those whom my critic has designated under the generic title of "medical students." J. Herbert Claiborne, Jr.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of February 22, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Old Unreduced Dislocation of the Hip, with Probable Fracture.—Dr. R. Abbe presented a patient with the following history: A year and a half before he was working in a mine, when a portion of the roof fell upon him, striking him on the right hip when he was in a stooping posture. During the first four weeks following the accident he received no treatment; then a surgeon endeavored to reduce the dislocation, but was unable to do so. He went to Santa Fé, where he was etherized and the limb was straightened, although he does not know the exact nature of the manipulation. The leg was kept in plaster for four weeks, and after this was removed it was more nearly straight than before, but there was decided shortening. Nothing had been done since. Although the exact character of the original injury was not clear, it was evident that there had been a forward dislocation, as the patient was sure that until he was treated at Santa Fé the limb was much shortened, and the foot was so adducted as to rest upon the opposite one. At present there was shortening to the extent of three inches, but the patient could walk well, and had but little pain, except when he lay upon the affected side.

Dr. H. B. Sands did not see how the condition could be simple dislocation alone, as the foot was now everted.

Dr. Abbe suggested that the tissues around the head of the bone might have become so worn during the year and a half that had elapsed since the accident that a greater range of motion was now allowed than had been the case at first.

The President said that he could feel a prominence that moved independently of the trochanter, but was too high to be the head of the bone; he thought that there had probably been a fracture as well as a dislocation.

Dr. Abbe said that four weeks after the accident, when the unsuccessful attempt at reduction was made, the miners who assisted the surgeon said that they heard something snap during the manipulation; there might have been a fracture at this time.

Radical Cure of Hernia by the Czerny-Riesel Method.—Dr. F. Hartley presented a patient upon whom he had operated for the radical cure of hernia four months before. The man was thirty years of age, a cook, and had suffered from a reducible inguinal hernia upon the left side for a year previous to the operation. At the time of the operation the hernia had become strangulated, was of about the size of a large orange, and contained about six inches of intestines and some omentum. In operating, Dr. Hartley made use of Riesel's modification of Czerny's method, as it allowed a more complete obliteration of the funnel-shaped portion of the peritonæum at the neck of the sac. The pillars of the ring, as well as the deeper tissues, were sutured with catgut, and the sac was dissected out. The man remained in bed for four weeks after the operation, although the wound healed by first intention. Since the operation he had worked constantly, with the exception of two weeks. At his work he was obliged to stand upon his feet during the greater portion of the day. He had not worn a truss, except for a week, after which time he discontinued it. This was done at the advice of a friend, and against the advice of the operator. In reply to a question by Dr. Poore, Dr. Hartley said that he did not favor the use of a truss after the radical operation, as it tended to thin out the tissues by constant pressure.

Traumatic Stricture of the Œsophagus in a Child, treated successfully by Dilatation and Internal Œsophagotomy.—Dr. Sands presented a patient with the following history: J. M., aged seven years and a half, was admitted into the Roosevelt Hospital February 20, 1887. He had swallowed some concentrated lye when a year and a half of age—five years before. On examination under ether, all instruments were arrested at a point seven inches and a half from the dental arch. On February 23d a flexible bougie, No. 7 (F.), with a No. 5 tip, was passed through the stricture. The time occupied by the boy in drinking a pint of milk varied from eleven to twenty-three minutes. On March 11th the bougies introduced were arrested at a point eight inches from the teeth, none entering the stricture. On the 16th a flexible bougie, No. 9, with a No. 7 tip, passed through. On the 18th a small catgut bougie was passed through, and was left *in situ* for an hour, in order to dilate the stricture. No instrument was passed afterward until April 12th, when bougies Nos. 7, 8, and 9 were introduced. On the 16th No. 10 was passed, on the 18th Nos. 7 to 11, on the 22d Nos. 7 to 12, on the 25th Nos. 8 to 15, on May 12th No. 16, on June 28th No. 18, on July 20th No. 20, and on August 24th No. 22. On the latter date internal œsophagotomy was attempted by Dr. Hartley with Dr. Sands's œsophagotome, having a No. 19 bulb; no advance was made, as a No. 23 bougie engaged tightly in the stricture. On September 16th and 30th œsophagotomy was again attempted, but without effect; No. 23 failed to pass, as the œsophagotome used was of smaller caliber than bougies that had already been passed. On November 1st a No. 23 passed with difficulty. On December 5th an œsophagotome with a No. 24 bulb was passed by Dr. Sands, and an attempt was made to cut the stricture posteriorly; it was unsuccessful on account of the dullness of the blade. On the 10th the same instrument was introduced, and an incision was made anteriorly, after which bougies Nos. 24 and 25 passed easily; on the 19th No. 29 passed with ease. On January 12, 1888, No. 28 was passed; on the 21st internal œsophagotomy was performed with a No. 27 bulb, an incision being made posteriorly. On February 22d bougies up to No. 34, inclusive, passed easily.

Dr. Sands remarked, in conclusion, that the patient had been very anæmic when he first entered the hospital, being able to take only a small quantity of fluid, and that with great difficulty; his general condition had improved greatly. He was now able to eat soft solid food readily, and the speaker hoped that the cicatricial ring in the œsophagus had been completely divided, so that there would be no further trouble. No reaction had followed the introduction of instruments, except on one occasion, when the patient complained of pain in his chest following the passage of a No. 16 bougie. It was feared that some damage had been done, but this symptom soon disappeared.

The little girl with an œsophageal stricture, who had been presented to the society a year ago last October, was now perfectly well, and could eat any solid food; no bougie had been passed for a year. These cases, the speaker remarked, were not very common. It was generally believed that the operation was quite a dangerous one, but, if it was performed slowly and only a slight incision was made, no harm resulted. It was also a common belief that this treatment was of slight avail. In the present case, when the patient first came to Dr. Sands, he was unable to pass a filiform bougie.

In reply to a question by Dr. J. D. Bryant, the speaker said that œsophagotomy seemed to cause no more pain than the passage of a bougie. There was no hæmorrhage.

Spontaneous Dislocation of the Hip-joint; Operation.—Dr. C. T. Poore related the history of the following case:

William L., six years of age, was admitted into St. Mary's Hospital in August, 1886. He was said to have had cerebral meningitis due to an injury to his head by falling out of a wagon and striking his head against a post. This occurred in June last. Some time in July his right side became paralyzed, and at the same time he lost the power of speech. He was brought to the hospital on account of his low condition. He was very feeble and suffering from bed-sores, one of which was over the trochanter of the right side. The speaker was asked to see him in June on account of extreme flexion of the right thigh upon the pelvis.

The head of the femur upon the right side was found to be dislocated backward and upward so that the head was hooked over and appeared to rest upon the sacrum. This had existed for some time, as the thigh had remained in this position ever since he had been in the hospital, a period of five months.

February 8th.—An attempt was made to-day to reduce the dislocation, but no change could be effected in the position of the head, nor could it be thrown out from behind the posterior edge of the ilium.

On February 18th the patient was etherized and an incision made over the head and down the shaft of the femur so as to give easy access to the parts. The head was found inclosed in the capsule, which had been stretched and greatly thinned. The head could not be moved from its position until most of the muscles attached about the trochanter major had been divided; also the tendon of the psoas and iliacus had to be cut. The acetabulum did not seem altered. The cartilage covering the head of the femur as well as that of the acetabulum was normal in appearance. The ligamentum teres had disappeared. The head was placed in the acetabulum and the wound closed by deep and superficial sutures. A long splint was applied extending from the axilla to the middle of the leg, and then extension was made. The wound united readily, except in the cicatricial tissue over the trochanter major, which sloughed and healed by granulations. He was kept in bed for eight weeks and then allowed to get up. The joint became ankylosed at an angle of about 135° with the transverse diameter of the pelvis, and three quarters of an inch shortening. This was a case of spontaneous dislocation of the femur. There was no disease of the joint, the head of bone being forced out of the acetabulum either by muscular contraction or by position. It was to be noted that the capsular ligament was not ruptured.

Prolapse of the Rectum.—Dr. Poore also related the history of the following case:

William F., five years and a half of age, came under observation December 31, 1884, with the following history. He had had a diarrhœa for some time, during which the rectum had come down after each passage, but either returned of itself or could easily be replaced until two weeks ago, when it came down, and since then had continued prolapsed, and he was admitted into the hospital to-day. On examination, there was found a tumor three inches long and about six inches in circumference protruding from between the nates; it was of a grayish color and covered with mucus. The patient did not seem to suffer much pain. There was an opening in the center of its distal end, through which fæces passed.

He was put under ether so that a more careful examination could be made and reduction accomplished. The prolapse consisted of the whole thickness of the gut; its external surface was continuous with the orifice of the anus, there being no sulcus at the verge of the anus. The finger could be readily passed into the center of the prolapsed portion. The part felt hard and brawny. All attempts to return the parts failed.

January 2d.—Dr. G. A. Peters was asked to see the child, who was again placed under ether and another attempt more persistent than the former made to reduce the prolapse, but with no better success. There was noticed at this time a slough of the mucous membrane over the lower portion of the tumor. The bowels and bladder were relieved this morning.

3d.—The slough was becoming deeper and involving the muscular coat; ordered a charcoal poultice.

6th.—The slough now involved about three quarters of the prolapsed gut, and a line of demarkation was evidently forming.

7th.—The slough separated, leaving a granulating stump.

8th.—This morning the remains of the gut passed into the abdominal cavity. Patient has no control over the sphincter.

He was left alone until late in January, when, on account of difficulty in defecation, he was again etherized so that the parts could be satisfactorily examined.

It was found that the sphincters were very lax. Coughing did not bring down any of the gut. On passing the finger into the rectum, at a point two inches above the anus it encountered a hard ring involving the whole caliber of the gut, into which the end of the finger could but just enter. On using a little force it could be passed through, and beyond this constriction was felt the normal caliber of the gut. By the aid of a speculum and reflected light the band was seen to be still cicatrizing. In February the parts had become well healed, and a stricture resulted which was gradually dilated and kept so for two months, when the patient was dismissed from the hospital. He had not been heard from since, but it was supposed that he would have further trouble.

The speaker did not think that in this case the obstacle to restitution of the gut into the abdominal cavity at the time of his admission into the hospital was due to the swelling, but to adhesions having been formed between two layers of the rectum which were abnormally brought into contact. He was not able to make out any hernia of the intestine into the sac thus formed. It was only from gross negligence that a condition such as the one described could have been brought about. How much the manipulations in attempting to reduce were a cause of the slough he was unable to say. At the time of admission the lower portion of the prolapse exhibited a slight slough of the mucous membrane.

Hip-joint Disease; Intrapelvic Abscess; Opening of the Rectum and Bladder.—The following case was also reported by Dr. Poore:

Oscar S., three years and a half old, was admitted into St. Mary's Hospital, March, 1886, with disease of the left hip joint of some months' duration. A hip splint was applied and he went about without any pain and rested well at night. In June an abscess was discovered above the joint. This was opened and he was able to be about again as before. He was at the sea-side until autumn, but during that time had much pain about the joint. After his return to the hospital he still suffered much, especially before having a movement of his bowels or passing urine; his bowels were constipated.

November 4th.—The patient was etherized and an examination made of the joint. The ilium was found to be greatly diseased and the acetabulum perforated, and an abscess of considerable size existed within the pelvis. The end of the femur was removed between the trochanters so as to afford drainage for the pelvic abscess. The wound healed, except a good-sized sinus, which formed a direct communication with the pelvic cavity.

In December fæces were found in the dressings, after each movement of the bowels, of good consistence and shape. The longest piece was about three inches. At this time the discharge was slight, but the parts were very sensitive.

January 8, 1887.—Patient was again etherized for examination. The finger could be easily passed through the sinus and the acetabulum into the pelvis. There was found a large cavity apparently formed by forcing the fæces inward; its boundaries could not be made out with the finger, but the bladder could be easily made out. No fæcal accumulation could be felt, nor, upon washing out the cavity, could any be found in the outflow. Apparently no water passed into the rectum, nor from the rectum into the cavity, but water passed freely from the abscess cavity into the bladder and out of the urethra. The patient was returned to his bed, and it was supposed that serious and fatal symptoms would follow, but there was nothing beyond a temporary elevation of temperature to 103° F. for two days. There was no cystitis, and from this date no fæces ever were discovered in the wound, but some appeared on the dressings, so that they were saturated with it, the patient still passing some through the urethra, but the major portion through the sinus about the hip. Discharge of pus slight.

As water still passed through the wound, on February 28th an opening into the bladder was made, the same as for the median operation for stone, in order to afford drainage to the bladder and thus prevent any accumulation of urine, in the hope that the opening in that viscus would close. A rubber drainage-tube was inserted. This in a few days was replaced by a female silver catheter. After this, urine was passed both by the perineal wound and by the sinus about the hip, through the latter in smaller quantities than before. Gradually it ceased to flow through the hip wound, so that by April it had stopped.

In May some glands in the groin suppurated and were removed, and after this he passed all his urine through the urethra. Early in June the patient was allowed to be up, and went about without a brace. During the summer he was down at the sea-side, and in October was discharged. The amount of shortening at this time was one inch. All wounds and sinuses had closed.

The speaker remarked that intrapelvic abscesses in connection with hip-joint disease were not very unusual; connection with the gut or bladder had been reported, and cases where fæces had appeared in sinuses about the hip were mentioned, but they had almost always been followed by a fatal termination. In this case the disease was more marked in the pelvic bones than in the head of the femur. Where the opening into the rectum took place could not be made out. The fæces came through the sinus as well formed as though they had come through the normal passage. In regard to the opening into the bladder, he thought it was formed at the time of the first examination, possibly by the injection of water, yet he did not think that much force had been used. In regard to the size of the rent, it must have been considerable, because the flow of bloody water from the urethra after a catheter had been passed was of the full caliber of the instrument. It was an odd coincidence that no fæces were passed from the sinus after the injection of water into the cavity, and that none occurred subsequently. The opening in the perinæum did not seem to afford the relief that it was expected it would. The intense pain before any movement of the bowels or passage of urine, without doubt pointed to the intrapelvic abscess, as it ceased immediately upon a passage being afforded to the pus by excision of the joint.

Dr. **Bryant**, referring to Dr. Poore's case of dislocation, asked how much of the bone had been removed.

Dr. **Poore** replied that the section had passed through the trochanter major.

Dr. **Bryant** asked if the acetabulum had been much involved.

Dr. **Poore** said that both the rim and the floor were extensively diseased, and that practically all the affected portion had been removed.

Dr. C. **McBurney** asked how much time had elapsed since the femur was reduced.

Dr. **Poore** said about a year. In reply to a question by the **President**, he said that the head of the bone was within the acetabulum. It had been out for five years. He was unable to account for the present shortening. There had been no arrest of development in the lower limb.

Dr. **Sands** asked if it was not very rare to have three quarters of an inch shortening.

Dr. **Poore** did not think so. He had made a hundred measurements in Charity Hospital, and had found that amount of shortening in several cases.

The **President** said that he had made numerous measurements on the cadaver, and regarded three quarters of an inch as extreme shortening.

Dr. **Sands** had rarely found more than half an inch.

The **President** referred in this connection to the case of the patient presented by Dr. Abbe; if the neck of the femur had been broken in this instance, its vitality had been preserved.

Dr. **Bryant** referred to a case which he had observed when house-surgeon at Bellevue Hospital. A sailor fell from the rigging and dislocated his thigh. Some time after it had been reduced it was noticed that the neck of the bone was within the acetabulum, while the head was still on the dorsum ilii. The patient could walk well, and the local condition was the same when he left the hospital.

Dr. R. F. **Weir** spoke of the case of a woman, weighing two hundred and fifty pounds, who came under his care having a thyreoid dislocation of five or six weeks' standing. While trying to reduce the dislocation he fractured the neck of the femur. The limb was placed parallel to its fellow and kept in a Buck's apparatus for six weeks, when the patient returned to her home in the country. A bad result was expected, but six months later she was reported walking about in a satisfactory manner.

The **President** said that a sharp distinction must be made between the different sites at which fracture might occur. Union was less apt to occur if the narrow part of the neck was broken. In the latter case mobility at the hip joint was greatly restricted.

Dr. **McBurney** said that over a year ago he had reported a case of dorsal dislocation of six months' standing in a child seven or eight years of age, in which he made a free incision over the joint and then effected reduction. The acetabular cavity was filled with a pulpy material, which was removed, but was, unfortunately, not examined microscopically. The wound healed with the exception of a small sinus, but some months later the head of the bone became carious, so that it was necessary to excise it. At the time of reduction the head and acetabulum seemed to be free from disease, but at the second operation both were found to be carious. There was a question if the pulpy material in the acetabulum was not tuberculous. In reply to the President, the speaker stated that the dislocation was due to a fall.

The PRESIDENT said that Dr. McBurney's case of dislocation was almost unique. In all the other reported cases but one the operation had failed to reduce, and after the successful reduction the patient had died of septicæmia. When the head was excised the results had been better than after osteotomy.

Dr. POORE asked if a good result was to expected from subtrochanteric osteotomy in a case such as the one under discussion. The difficulty was that flexion always returned.

The PRESIDENT cited Van Buren's case of a child, both of whose thighs were abducted and flexed. Excision was performed on one side, and subtrochanteric osteotomy on the other; the former operation gave a movable limb, the latter a straight but ankylosed one.

Dr. SANDS thought that there was never much motion in cases of old traumatic dorsal dislocations, at least he had never noted it. All the anatomical conditions were against mobility.

Dr. POORE said that he had seen movable joints in children under these circumstances.

Dr. ABBE said that he had performed subtrochanteric osteotomy six months before for the relief of dorsal dislocation in a paralytic. The right thigh was adducted across the left in such a manner that the patient was greatly inconvenienced. The position of the limb was so rectified that it was parallel with the other. In reply to Dr. Sands, he said that there was only slight mobility before the operation, the head of the bone resting high on the dorsum. The dislocation had been progressing for several years, and no instrument had accomplished anything.

Avulsion of the Terminal Phalanx of the Thumb, with its Tendons.—Dr. WEIR showed, through the courtesy of Dr. J. J. Hull, the terminal phalanx of a thumb, to which were attached the tendons of the extensor longus pollicis and the extensor secundi internodii pollicis, the tendons measuring eight and nine inches respectively. The patient, a young man, had caught his thumb between the cogs of an elevator-machine, and, in endeavoring to free it, torn away the portion shown. He had severe pain at first, which lasted but a short time. The wound healed without febrile reaction under antiseptic dressings.

Multiple Abscesses of the Liver; Death after Hepatotomy.—The PRESIDENT exhibited a liver removed post mortem from an Italian woman who had been suffering for several days before entering the hospital with fever and ascites. A friction sound was heard over the liver, and the operation was deferred for a few days in order that parietal adhesions might form. An incision an inch in length was made in the median line just below the sternum, and the liver was found to be perfectly free, moving with respiration. The abscess was punctured with an exploring needle, and pus followed the withdrawal of the needle. The abscess was then opened, and its walls were stitched in the abdominal wound. A second incision was then made through the abdominal wall, at a point lower down, in order to drain off the ascitic fluid. The patient was unruly, and removed the dressing and pulled out the drainage-tube on the third night; the next day the temperature rose, and she died thirty-six hours after. At the autopsy there were no evidences of peritonitis. The liver contained one large abscess-cavity, having a wall a quarter of an inch thick (containing about a quart of pus), and several smaller abscesses, which were scattered throughout the organ. The abscesses were supposed to be of syphilitic origin, but the patient had presented no evidences of syphilis. In reply to Dr. SANDS, the president said that he could not state the exact cause of death. The patient had had a high temperature for a week before she came under his care, the thermometer sometimes registering 105°.

Dr. ABBE asked if the result of the case did not seem to indicate that exploratory puncture of abdominal abscesses was dangerous.

The PRESIDENT agreed with Dr. Abbe, and said he had refrained for a week from making an exploratory puncture through the parietes, because of the risk and to allow the formation of adhesions. But the wall of the abscess was a quarter of an inch thick. The needle used was of rather small size.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of March 1, 1888.

The President, Dr. THOMAS M. DRYSDALE, in the Chair;
Dr. J. M. BALDY, Secretary.

An Aseptic Two-way Catheter was shown by Dr. HOWARD A. KELLY, who stated that the instrument would conduct and discharge water and solutions with the utmost freedom, and at the same time allow of perfect and ready cleansing after being used, which was a great desideratum. In the light of the antiseptic surgery of the present day, the use of such two-way catheters as were commonly found in the surgeon's bag a few years ago was in the highest degree dangerous, because of the necessarily tedious process of cleansing them and the impossibility of being sure that they were clean. One of the best ever devised for the use of the gynæcologist was Bozeman's, which had been so modified by Fritsch and Olshausen that the delivery-pipe and the discharge-pipe were two separate pieces, the former being inclosed in the latter and held in place by a cap when the instrument was not in use. This would be better understood on examining the speaker's modifications. The syringe, as constructed by him, consisted of three parts: 1. The delivery-tube, which conducted the stream from the hose connected with the reservoir into the uterus. This tube was well curved, and was furnished with a knob at its entrance, to hold the hose better. It terminated in a button, with a series of holes around and a little below the outer margin, in the form of a rose, so placed that the stream was thrown out on all sides and directed a little backward. The two other pieces were the two lateral halves of the exit-pipe, which were attached very simply by inserting one end of each in the shallow collar under the rose, bringing the two together around the inlet-pipe, and screwing the nut down on the thread on their upper end. Each side had a fenestra in it near the point, and was scooped out near its upper end so as to form a good-sized hole when the two were fitted together. The water would flow forcibly from the holes at the end, washing with it débris and fluids, which at once entered the large fenestra on the side and were carried down through the large tube into the receptacle. After the instrument had been used, all its parts could be readily separated and cleansed. The inside ought to be as highly polished as the outside. The instrument had been made very satisfactorily by

Mr. Gemrig, who had also made one of solid silver for Dr. Sweetnam, of Canada, which the speaker now showed. If the nomenclature was to be kept up as in the past, the device should be called the Bozeman-Fritsch-Olshausen-Kelly catheter.

A Vaginal Cotton-packer also was shown by Dr. Kelly, who had used it constantly for many months with great satisfaction. It consisted of a delicately tapering handle terminating in three diverging tips a little flattened on their upper and lower surfaces.

The Placenta of a Uni-ovular Twin Gestation was shown by Dr. B. C. Hirst. It formed one mass, of about twice the size of an ordinary placenta, with the most intimate anastomoses between the two sets of fœtal vessels. There had been hydramnion of one of the fœtal sacs.

A Parietal Bone with a Spoon-shaped Depression was also shown by Dr. Hirst, taken from an infant that had died two days after its birth. The labor was a difficult one, and was terminated with the forceps. The child presented by the vertex in the right occipito-posterior position; the head was large, the occipito-frontal circumference being 36·5 ctm.; and the mother's pelvis was slightly flattened. At the point corresponding to the indentation of the bone there was a deep, broad depression of the brain-substance. The child had apparently died of congestion of the brain and serous effusion into its substance.

Dr. William Goodell remarked that Ambroise Paré had compared such depressions to the indentation on a kettle-drum. In this case it was very typical. After turning, in cases of flat and narrow pelvis, these indentations were very marked; then they occupied the temporal and not the parietal region, the shorter bitemporal diameter being the one implicated, showing the two mechanical advantages of turning—the presentation of the small end of the cephalic wedge at the conjugate and the engagement of a shorter cephalic diameter than the biparietal.

Dr. John C. Da Costa wished to know if Dr. Goodell thought that turning could always be done in such cases. He spoke of a case of his own in which the bone had been much more depressed than in the specimen shown; the whole left side of the head was forced in by a large fibroid of the uterus, which fitted into the depression after the manner of a mortise-and-tenon joint. The pelvis was of good shape and roomy, the cervix was wide open and soft, and yet the head, which was at or above the superior strait in the left occipito-anterior position, could not descend on account of the tumor. As the woman was in good condition and nothing seemed to be going wrong, the speaker did not interfere for a time, and then, with the aid of some manipulation, the head began to disengage itself from the tumor and rotated into an occipito-posterior position, and the child was born alive. This child could not have been turned, as the membranes had ruptured and the uterus was grasping the body firmly; and, even if it could have been, it would probably have died from pressure on the cord during the long delay that would have ensued in extracting the head, for the tumor would most probably have been caught under the chin. The forceps could not be applied, on account of obstruction to the left side of the tumor.

Dr. Goodell thought that Dr. Da Costa would have had less trouble if he had been able to turn the child; he did not think the neck would have been caught. He had been speaking before of the mechanical advantages of version, and not of the difficulties in its performance.

An Improved Obstetrical Forceps was shown by Dr. W. S. Stewart (see the report of a meeting of the Philadelphia County Medical Society, page 301).

Dr. Kelly had examined the instrument, and had been surprised to see how the difficulty of parallel handles had been overcome. He thought, however, that the axis-traction mechanism should have been added.

Dr. Baldy was not particularly fond of using forceps of any kind, and had often seen a head expelled spontaneously on which the use of the instrument had been urged. However, there were cases in which its use became necessary, and in such cases it was desirable to have as perfect a forceps as possible. He had no objection to make to the parallelism of the handles in the one presented, but he thought that a very serious objection was to be found to the so-called toggle-joint. With this instrument as it stood there was no possible way of regulating the compression force applied to the child's head, and, although Dr. Stewart had not yet marked or injured a child, he would surely do so sooner or later if he continued its use. He thought, with Dr. Kelly, that an axis-traction mechanism should be applied to a modern obstetrical forceps.

Dr. G. E. Shoemaker had on a previous occasion called attention to the dangerous compression power developed by the toggle-joint. He thought that, to make the instrument safe, there should be an adjustable attachment—such, for instance, as a sliding ring about the handles—to limit the compression force at will, as the present shoulder was fixed and was situated too far back.

Dr. Longaker found serious objections in the number of joints in the instrument, which made it difficult to keep it aseptic. He did not think that Simpson's forceps could be improved upon.

Dr. Stewart was surprised at the number of objections raised against the instrument, as well as at the doubts expressed concerning the results of its use. He had now extracted eight children with it without injury. He could deliver with it in cases in which delivery with any other forceps was impossible. Those present must take his word for the results obtained thus far, or go with him and see if there was any evidence of injury to any of the children, all of whom were living, on whom the forceps had been used.

Dermoid Cyst of the Ovary; Chronic Cystitis.—On behalf of Dr. Holmes, Dr. Longaker presented the history of a case which had terminated fatally after long suffering with pain within the pelvis and elsewhere, together with chorea. It was interesting from the fact that at the autopsy no lesions were found more serious than a moderate-sized dermoid cyst of the ovary slightly adherent to the omentum, with chronic cystitis, and from the simplicity of the operation that would probably have given relief.

Dr. M. Price spoke of the frequency with which cases came up of pelvic disease treated as malarial, rheumatic, neuralgic, etc., and mentioned as a case in point that of a lady whom he was now treating for ovarian disease. She was at present forty-seven years old. She was married when she was fifteen, contracted gonorrhœa from her husband at that time, and had since remained sterile, with scanty menstruation, and great pain—sometimes agonizing—on coitus. At times she had severe pain running down the left leg. On examination, the ovary was found to be as large as an orange and excessively tender, so that, when pressure was made on it in bimanual palpation, she went into convulsions on the table. The speaker did not know what relation this condition had to the trouble in her early married life, but it was certainly the cause of her barrenness.

The Use of Terebene in a Case of Uterine Cancer.—On behalf of Dr. J. S. Gibbs, Dr. Longaker read notes of the case of a lady with advanced carcinoma of the cervix uteri, in which, after a hæmorrhage had been controlled with Monsel's solution on a certain occasion, pledgets of cotton saturated with a mixture of one part of terebene and four parts of olive-oil were packed against the cervix, according to the plan of Betrin, of Geneva. This mitigated the offensive odor, but it was suspected of being connected with the patient's death; within a few hours of the time of its application she sank into a somnolent state from which it was difficult to rouse her, with strangury and almost complete suppression of urine, and died in thirty-six hours. Post mortem, the cervix was found extensively infiltrated and ulcerated, and there were a few nodules in the body of the uterus. The ureters and the pelves of the kidneys were dilated. It was noteworthy that there was no cachexia or emaciation.

Dr. G. E. Shoemaker thought that the suggestion that death had been due to an application of terebene should be carefully considered. He was constantly using the drug and observing its use internally in much larger quantities than could have been absorbed from such an application, and without observing signs of irritation. He asked if death might not have occurred from uræmia independently of its use.

Dr. Longaker believed that the application of terebene had hastened the death; the strangury and suppression had come on quickly after it, and the case had lacked some of the ordinary symptoms of uræmia.

Conjoined Twins.—Dr. Goodell showed a specimen that had been sent to him by Dr. Junius F. Fuller, of Roxborough, N. C. It was a perfect specimen; the bodies were united at the hips and there were three feet in common. Some years before, analogous living conjoined twins had been on exhibition in Philadelphia, and he had brought them before his class at the university and given a lecture on the subject. From investigations then made, he had found that this form of conjoined twins was not a very rare one, as Aldrovanus and other old writers had described and figured them. The specimen now presented must have been cast off at the third month of gestation.

Hydrosalpinx.—Dr. Goodell also showed a specimen of hydrosalpinx, which was the largest one that he had ever seen, although he had met with much larger specimens of pyosalpinx. The patient had been treated by many gynæcologists, but the true condition had not been recognized. Complete relief from pelvic pain had followed the operation, but menstruation had continued up to the present time, although the periods were growing less frequent. Since it had been contended by some eminent surgeons that, when menstruation continued after the removal of the uterine appendages, some ovarian stroma must have been left behind, he wished to call attention to the complete removal of both ovaries and tubes in this case. Although the former had been more or less adherent, it was evident from the specimen that not a particle of ovarian stroma had been left behind.

Dr. M. Price had had two cases in which menstruation had not ceased at once after removal of the appendages, but had continued for a year and a half in one and for six months in the other. He had no doubt that Dr. Goodell's patient would show the same result; most operators had little doubt that in such cases the removal had not been complete.

NEW YORK CLINICAL SOCIETY.

Meeting of January 27, 1888.

The President, Dr. Robert Abbe, in the Chair.

Lateral Curvature of the Spine; its Treatment by Exercise and Posture after the Method of Bernard Roth, with Demonstrations.—Dr. V. P. Gibney read a paper on this subject (to be published hereafter), and made the demonstrations.

Tubercular Disease of the Sheath of the Extensor Tendon of the Thumb.—Dr. R. J. Hall presented a man with this not very common affection. The case was of interest because of the demonstrability of the tubercular character of the rice-like bodies present in the granulation tissue, the true nature of which had not until recently been shown. The patient was a German, aged twenty-nine, with no family tubercular or venereal history. He himself, however, had had a tubercular lymphoma in the neck, which had been removed some years before in Germany, the scar of which still remained. Several months ago he thought he strained the extensor muscle of the thumb, acute inflammation developed, and Dr. Lange operated three years and a half ago. But the difficulty returned, although the wound had healed eight weeks after the operation. The patient consulted the speaker in July, 1886, at which time he had a fluctuating tumor containing rice bodies. In addition to the rice bodies, the cavity was lined with soft tubercular granulation tissue, which could be scraped away with the sharp spoon. Many years ago Koenig had pointed out that these bodies were probably tubercular, but the tubercle bacillus had not been demonstrated. The speaker had first shown its presence in a case of Dr. Bull's. He proved that the bodies had not the structureless formation of coagulated fibrin, but were tubercular, with consecutive fibroid change. In the present case there had been a recurrence at the upper end of the sheath of the tendon.

The President asked whether the tendon was entirely denuded of its sheath, and remarked that at one time it was believed that the sheath was absolutely necessary for the free play of a tendon. It was now known, however, that a tendon could lie loose in the cellular tissue, denuded of its sheath, yet in a short time regain its freedom of motion.

Dr. Hall remarked that the granulation tissue in these cases was frequently mistaken for sarcoma.

The President recalled the case of a girl of six years ago, who had a condition similar in appearance to that described by Dr. Hall, which was pronounced sarcoma. She was operated upon in the New York Hospital, and there had been no recurrence, which went to show that the disease was not sarcoma.

Fistula of the Trachea.—Dr. D. B. Delavan presented a man who was in the third stage of phthisis. About five months ago a swelling developed over the lower part of the larynx, which progressed and formed an abscess. He applied for treatment at a homœopathic dispensary, where the abscess was opened, and during rather vigorous probing the instrument entered the trachea, forming an aerial fistula just below the cricoid cartilage. The fistula had never closed. The man appeared at the speaker's clinic a short time ago, and it was found that the abscess cavity had never been thoroughly cleansed, but was filled with broken-down, cheesy material. He asked the president what the prospects were of closing the opening by operation.

The President had had one case of aerial fistula in which the opening was sufficiently large to admit the finger. It was closed readily by a plastic operation.

A Discussion on Alexander's Operation.—Dr. H. C. Coe said that he could speak of the operation simply from observation. He was more interested in the anatomical questions involved than in the technique. Moreover, he had been able to observe in out-door patients the ultimate results of operations by several gentlemen, a privilege not always enjoyed by the operators themselves. With reference to the mechanical theory of the operation, he had never been able to divest himself of the idea that it was to a certain extent faulty. Granting that in cases of Alexander's operation, when performed for the relief of retroversion, the shortened ligaments served simply to retain the uterus in a position of anteversion, so that it could be acted upon by the intra-abdominal pressure and the weight of the intestines, it could not be denied that, when it was performed for the relief of old procidentia, the heavy organ was actually suspended by two slender cords which were never intended by nature to sustain such a weight. The inference was that, while retroversion might be permanently cured by shortening the round ligaments, in prolapsus there was a constant tendency to relapse from stretching of the ligaments. Why should they not stretch just the same as the vaginal tissues stretched after plastic operations designed to afford support to the uterus? It seemed to the speaker as if the tendency was even greater, since the stretching force in the former case acted from below. Evidence was both anatomical and clinical; the former the speaker had derived from observations made in the dead-house, where he had satisfied himself that the amount of cord which it was necessary to draw out before the uterus was brought into the position aimed at theoretically was greater than that pulled out by most operators. The speaker had witnessed operations in which he was sure that the uterus fell back to at least the first degree of retroversion as soon as the sound had been removed. The operator could seldom judge exactly how much of the cord to pull out, as each patient presented individual peculiarities with regard to the normal length, thickness, and elasticity of the ligaments and the attachment of the peritonæum.

Remembering how often we met with pathological conditions of the tubes and ovaries where the extent of the disease had not been appreciated before the abdomen was opened, and the serious results that might follow forcible traction upon them when adherent, we could see one possible danger in dragging the uterus above the plane in which it had long been situated. Fatal cases were not unknown; the speaker had made an autopsy upon a young woman (perfectly healthy before the operation) who died of pyæmia following shortening of the ligaments for simple retroversion. Both wounds sloughed badly and the pus extended upward along the canals. The uterus was found lying in the hollow of the sacrum, as before the operation.

If the uterus was drawn upward to a sufficient extent to entirely overcome the prolapsus, the bladder was elevated to an abnormal degree and constant traction was exerted upon its neck, leading to frequent micturition, sometimes with tenesmus. This symptom the speaker had observed in two cases of Dr. Mundé's, in which the ultimate result of the operation as regarded the maintenance of the uterus in its normal position had been perfect. One patient was operated upon two years ago, the other five months ago. Still, the speaker had noted this same symptom in a case in which he performed hysterorrhaphy for retroflexion with fixation. It was practically impossible for the operator to know exactly how much traction could be exerted upon the uterus without also making undue traction on the bladder.

There could be no doubt, from the standpoint of the non-surgical physician, that Alexander's operation was rather a severe method of dealing with a condition that in itself caused simply annoyance and discomfort, and never shortened life—did not even make the woman an invalid. Its true sphere was admitted to be in cases of procidentia in working women. But they were just the persons in whom the results were least likely to be permanent. We should see patients at the end of one, two, or three years before making up our statistics. Unfortunately, this had been done in only a small proportion of the recorded cases (now amounting to several hundred). The speaker had performed Le Fort's operation for complete procidentia, and the uterus remained in position for two years, but finally came down again. The organ was not large, but continual straining and lifting finally overcame the resistance offered by the adhesions of the vaginal walls. Let us clearly understand whether Alexander's operation offered a cure in itself, or simply enabled a patient to wear a pessary to greater advantage than before. Certain operations on the vagina and perinæum accomplished this also.

The President had had an experience with Alexander's operation which had developed in him some enthusiasm for it. He had performed it eight times, with, as far as could be judged at present, marked success. The earliest operation, however, dated back only a year and a half. In four cases the operation was done for extreme procidentia, in three for moderate procidentia, and in one for retroversion.

The case of retroversion was the first. The uterus was tilted completely backward on to the rectum, and gave the usual symptoms in great severity. The patient was practically disabled. The ligaments were very easily found, and the uterus was dragged up by pulling them out three inches and a half on one side and four inches on the other. Then one ligament was pulled through the subcutaneous cellular tissue over the pubes to the opposite side, and there tied in a knot with the opposite ligament so as to make it perfectly secure against retraction. The wounds healed primarily and the womb was held up against the pubes. The patient remained perfectly well five or six months, when pains developed in the pelvic cavity of a different character from those which had existed there formerly. It was found necessary to remove the ovaries, and during the operation he had an opportunity to examine the condition of the uterus. It was being held up in its normal position without the slightest retroversion. The round ligaments were firm, but not in a state of marked tension, showing that they were in the position they had been placed in a year before. The uterus when first replaced was in a state of hyperplasia; the fundus was large and heavy, and the cavity measured three inches and a half. At the time of the laparotomy the uterus was still large, yet it was being held in position. The removal of the ovaries led to marked atrophy of the womb.

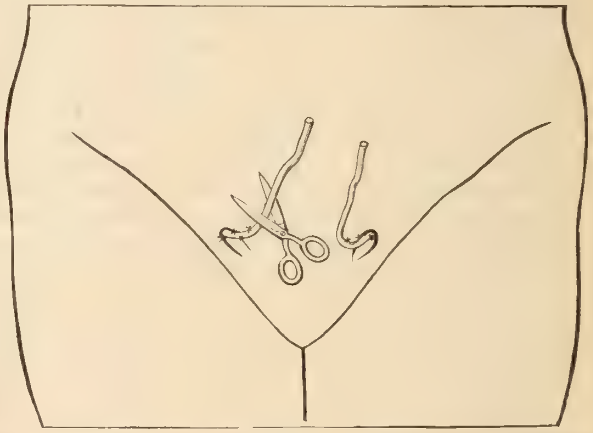

Fig. 1.—The usual method of securing the round ligament and cutting off the end.

The next case was one of procidentia uteri. While it was not an extreme case, yet the womb was outside the body. Alexander's operation was performed in the same way as in the first case, except that the ligaments were pulled out a distance of four inches on either side. A small incision was made over the symphysis, through which both ligaments were drawn, one from either side, when they were looped together and the two ends stitched to one another to retain them firmly in place. Primary union took place and the patient made a good recovery. The patient married a second husband soon after the operation, and there had not since been the slightest indication of recurrence of the procidentia. The operation was done eighteen months ago.

In another case the procidentia existed in the third degree, and cystocele was well marked. In this case he tied a knot in the round ligaments over one inguinal ring. Primary union occurred. The uterus was retained well up in position. This patient had had the womb outside of the vulva three or four years, and had suffered much in consequence.

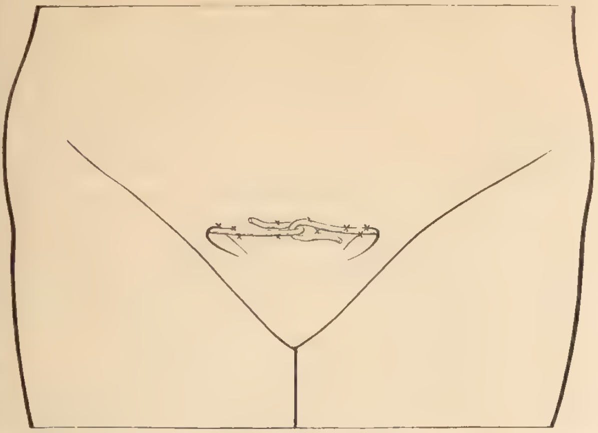

Fig. 2.—Subcutaneous looping and stitching of the ligaments together, a small incision being made.

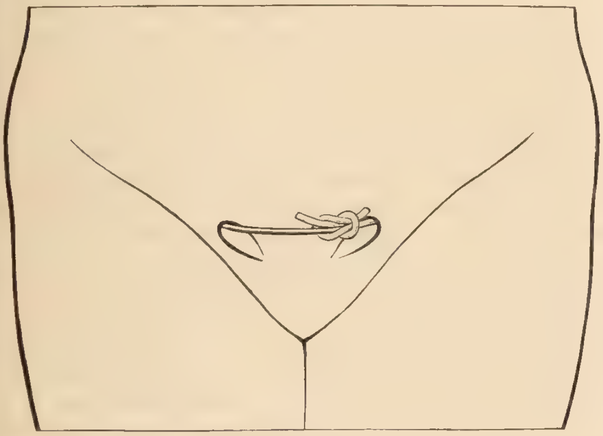

Fig. 3.—Knotting of the ligaments together subcutaneously.

In one other case he resorted to a different method which he thought well illustrated the manner in which success was obtained in holding the uterus in position by the round ligaments. The ordinary method of cutting off the redundant portion of the ligaments after pulling them out, and stitching the remaining portion at the inguinal ring, it seemed to him, gave a chance for the ligament to slip back. He had practiced three different methods in order to avoid this accident. The first consisted in looping the ligaments together, the second in tying them together in a knot, and the third in using them as a suture to close the wound made while searching for them. He had resorted to the latter method in three or four cases. Primary union had followed, the ligament could not possibly slip back, and the result had been uniformly good. In one case he had been able to find but one ligament, which he used as a suture in the manner described, and it held the womb well in place.

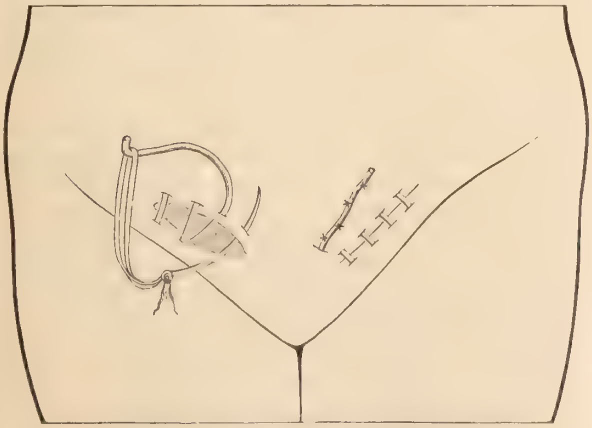

Fig. 4.—Suture of the inguinal ring with the round ligament.

Regarding stretching, it did not seem very probable that the round ligament would stretch much. He had had opportunity to examine the conditions of the womb and ligaments after laparotomy performed some time subsequent to Alexander's operation in one other case. Dr. McBurney had performed Alexander's operation on the patient with the result of the round ligaments holding the uterus well in place, and the speaker had occasion to perform laparotomy for a circumrectal growth some months later.

Dr. Coe asked the president in what way he would account for the subsequent fall of the uterus outside the vulva after Alexander's operation if there was no stretching of the round ligaments.

The President supposed that in such cases there was slipping back of the round ligaments. That the ligaments could support the uterus was evident from the fact that in one of his cases he had employed no other support; there was laceration of the perinæum, which he did not close, yet the womb was retained perfectly in place after shortening the ligaments. The ligaments could be felt to roll under the fingers over the pubes after the operation.

Dr. G. M. Tuttle's experience with the operation had been limited to the observation of cases in the hands of other operators and to two of which he had had the immediate care. The technique of the operation in the hands of skillful surgeons seemed to be uniformly practicable. A theoretical objection which had presented itself to his mind was that the operation did not seem to imitate Nature's method of doing her work. He fully agreed with Dr. Coe that we needed an experience of some time to prove that a large, heavy uterus could be hung by two cords which all anatomists acknowledged did not in the natural state do much toward supporting that organ. He found it difficult to believe, on either theoretical or practical grounds, that the uterus could be hung successfully for any length of time when all the supports below had given way. The case reported by the president would seem to be a very unusual one. He did not think the operation was adapted to extreme procidentia unless supplementary methods were employed—that was to say, building up the pelvic floor from below. The operation appeared to him to have a true field in uterine retroversion and retroversion with retroflexion. There, as all men with practical experience in trying to correct such displacements knew, it was of the greatest difficulty to throw the uterus so far forward that the intra-abdominal pressure would exert itself chiefly on its posterior wall. That was chiefly what we tried to do with the pessary or tampon applied in the vault of the vagina. Shortening the round ligaments under such circumstances would seem a valuable supplementary measure in keeping the uterus for a time at least in its forward position. A further supplementary measure in cases of enlarged uteri was the induction of involution by cutting out a piece of the neck, as practiced by Martin, of Berlin. The speaker hoped that all surgeons who had performed the operation would realize the importance of reporting the full results for as long a period as the patients could be kept under observation.

Dr. W. M. Polk, by invitation, was sure that the remarks which he had heard were ample stimulus to any one to speak in favor of the operation if he had a predilection in that direction, as he most decidedly had. There was nothing in the new operation which so attracted one's attention as the fact that in setting out to accomplish a certain object it did it with at least as little risk as procedures which had already been devised for that purpose. That being the case, the operation should be judged only by its curative results as compared with those of others.

Dr. Tuttle was probably correct in the view that, if we sought to correct procidentia by swinging the uterus from the round ligaments, we should be flying in the face of Nature. But operators of experience had ceased to rely upon shortening of the round ligaments alone to retain the fallen uterus in its corrected position without resorting to further measures. It was necessary to repair the perinæum and narrow the vagina, and, having done this, it was further necessary to adopt some means of retaining the uterus in the anterior inclination, to prevent its resuming that of retroversion. To accomplish the latter object, the speaker looked upon the Alexander operation as the ideal one. It was imitating nature as nearly as possible under the circumstances.

As to the results, in his cases they had been the same as those related by the president, nor could he see any reason why the patients should not remain permanently benefited. The results up to the present time had been good. He asked Dr. Coe whether in the case referred to in his remarks, in which the cervix appeared at the floor of the pelvis, there had not been hypertrophic elongation of the cervix.

Dr. **Coe** replied that in two cases the uterus itself had fallen.

Dr. **Polk** said that that brought up the question as to whether the ligaments themselves could become stretched. He thought there was no doubt that they could. In one of his cases he made too great traction upon one ligament, and it broke, so that he had only the remaining one with which to support the uterus. On the fourth day he learned that the nurse had neglected to use the catheter, and, as the woman could not void the bladder voluntarily, the viscus became distended and caused backward and downward displacement of the uterus. He opened the wound to see whether the ligament had broken from its attachments, but he found the sutures had retained it in the position in which he had left it, thus proving that the cord must have become stretched. Of the cases of procidentia treated by colporrhaphy and perinæorrhaphy by Schroeder, about one third relapsed at the end of two years, but the speaker thought that if he had added Alexander's operation, so as to bring the uterus forward and hold it there, there would not have been those relapses. The mere fact that one third of the cases relapsed after the old operation was reason for adding Alexander's.

Regarding Alexander's operation for retroversion of the uterus, its benefits were conceded even by its opponents. One of the objections which had been raised to it was that in some cases it was unquestionably an anatomical success but a therapeutic failure. It was often the case that the therapeutic failure was most pronounced a few months subsequent to its performance. But when we inquired into the causes of this failure it would be found that in many instances it was due to an improper selection of cases. He urged upon those who took any interest in the procedure the importance of making an accurate diagnosis. In retroversion and retroflexion it was necessary to determine exactly the condition of the uterine appendages, and that could be done only under anæsthesia. Fortunately this examination could be made at the time of the proposed operation. Simple bimanual examination as ordinarily practiced was not sufficient. The uterus should be grasped with the volsella, the finger introduced into the rectum, and a thorough examination made of the posterior surface of the uterus, of the round ligaments, and of the Fallopian tubes, for it was often only in this manner that it could be determined whether or not there were conditions present which might contra-indicate the operation. When disease of the tubes or ovaries was found, the operation should either be abandoned or be performed with the express understanding that it might not prove successful. When the tubes were dilated it should not be done at all, for in that case another procedure would be better. If there was cystic enlargement of the ovaries, Alexander's operation would be of no service, whereas, if there was enlargement of those organs due to congestion, it would result in good by bringing about involution. In these cases there was usually subinvolution of the body of the uterus, which might be a guide to the form of enlargement of the ovaries.

When the operation was done we should not pass judgment upon the results until sufficient time had elapsed for the disappearance of the congestion incident to the former displaced condition of the organ. That time differed in different women. In some it required only a month; in others it took six months. Therefore we should allow at least six months to elapse before we pronounced the operation a failure in a given case. Many of the most distressing cases were those in which the uterus was bound down because of inflammation in the structures around it, cases in which there was fixation of the ovaries and tubes as well as of the uterus. This state of things had been treated in various ways. Formerly it was attempted to bring the uterus up by pressure from the vagina, while subsequently the pressure was made from the rectum; again, the same result was sought for by forcibly bringing the uterus up with a sound inserted into its cavity, and Schultze had brought forward some very interesting experiments performed through the rectum while the patient was under the influence of ether. The speaker suggested that in this class of cases the abdominal cavity should be boldly opened and the adhesive bands binding down the tubes and ovaries torn up. If these organs were sufficiently inflamed to justify it, they should be taken out. He was satisfied that in some of these cases the cause of the patient's sufferings was simply the binding down of the tubes, ovaries, and uterus by adhesions. Where the tubes and ovaries were bound down by adhesions we should expect interference with their nutrition, and we might reasonably suppose that if they were released they would return to their normal state. Only last Saturday he had operated in a case in which he found only one tube bound down, and its opening at the fimbriated extremity readily admitted a probe. But if the adhesions were torn up and the organs were allowed to drop back, the question would arise, Might they not again become adherent and the painful symptoms be renewed? He believed that, if in such cases Alexander's operation was added, the patient's chances of recovery would be greater.

Regarding the results of the operation, he had performed it thirty-nine times, and his house physician had done it three times under his immediate supervision, thus making forty-two cases which he had to report. As examples he recited three. In the first the patient had suffered extremely from dismenorrhœa for years. Even during the intermenstrual period her life was a burden. She had been able to command the best surgical and medical care, but her condition failed to improve. She married, but no change for the better took place. Finally, in despair, a surgeon advised her to have her tubes and ovaries removed. She objected and came under the speaker's care, and he performed Alexander's operation. He had seen her that day, and the result had been a permanent cure. The second patient was one who had been treated five years for what was called nervous prostration, and during a year and a half had been confined to bed. The speaker found posterior displacement of the uterus and prolapsus of both ovaries. She had had the best medical care without relief. He performed Alexander's operation a year ago and she was now well. The third case was that of a broken-down hospital patient, who had retroflexion and hyperplasia of the uterus, also congestion and prolapsus of both ovaries. She was hysterical in an extreme degree. He did Alexander's operation, and a month afterward she became pregnant and gave birth to her child at term. The pregnancy went along without accident, as did also the labor, which was the easiest she had had. Thirty days after the labor he examined her, and found the uterus small and in precisely the same position in which it had been placed at the time of Alexander's operation. The case showed that stretching of the ligaments would not in all cases lead to a return of the uterus to its former bad position. It was true that in this instance there was physiological stretching, and subsequently there was physiological contraction.

The speaker thought it was well to join the two ligaments in the manner suggested by the president, although he had never so operated. The single incision over the pubes was preferred. Regarding the wearing of a pessary, he had not used it, but he thought it would be well to do so as a precautionary measure. To avoid suppuration he now employed drainage. If necessary, he thought there was no objection to opening up the canal to the peritonæum in order to secure the ligaments.

The PRESIDENT asked Dr. Polk whether he had seen difficulty from frequent urination following the operation.

Dr. POLK replied in the negative. Nor had he seen prolapsus of the anterior wall of the vagina, to which attention had been called by Dr. Mundé.

The PRESIDENT remarked that he had observed cystitis follow the use of a dirty catheter after this operation, which had caused difficulty with urination, but otherwise there had been no special bladder trouble. He asked Dr. Polk what his guide was to the length of the ligament to be withdrawn.

Dr. POLK said he was guided solely by the position of the uterus.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of February 22, 1888.

Dr. W. W. KEEN in the Chair.

(*Concluded from page 273.*)

Macewen's Operation for the Radical Cure of Hernia.—In the discussion of Dr. Keen's paper (see page 272), Dr. H. R. WHARTON said that he had had no personal experience with Macewen's operation for the radical cure of hernia, but had seen two cases in which Agnew's operation had been employed, and three or four in which MacDowell's method had been resorted to; these had been subcutaneous operations, and did not compare with this open operation in thoroughness. The immediate results had seemed good in the cases referred to, but in a short time the hernias were down again. Recent reports from England, though still too recent to allow us to estimate the permanency of the cure, were very encouraging. As to Macewen's operation, the speaker thought it one of the best that had been proposed, and if any radical procedure was to be undertaken it seemed to promise the best results. Of course, any operation was more apt to be successful in children than in adults.

Dr. C. DULLES asked if any appliance other than the bandage had been used after the patient began to go about. The hernia looked as if it had been down some time, and not as if it had descended recently. He thought it would be best not to trust solely to the strength of the tissues for a little while after these operations. There was a point in the mechanics of hernia which he had noticed, and which he had not seen described by others, and that was that a patient with an inguinal hernia usually had a pendulous abdomen. He had been curious to see if this spare patient of the chairman's followed the rule, and he saw that he did. He might lay too much stress upon the matter, but he believed that the best appliance was not one which made pressure over the ring alone, but one which corrected this abdominal outline and changed the direction of the thrust of the intestines from one at right angles to the plane of the hernial opening to one parallel to its plane. Such an abdominal supporter as women wore would answer the purpose, and he believed that it would add to the chances of permanent success after operations for the radical cure of hernia.

Of the cause of failure the CHAIRMAN could only say that apparently the reparative power had not sufficed to produce adhesion of the sac to the abdominal wall. Why, unless the two chills referred to had had some influence, he did not know. The usual practice of those who had had a large experience with these operations had been not to use any truss. He must take exception to a diagram drawn by Dr. Dulles. That gentleman was right as to the shape of the abdomen, and in correcting it to a more oblique outline, but the pressure would always be at right angles to the abdominal walls anteriorly, and not, as he had it here, down into the pelvis. That would, however, correctly express the direction of the rebound. As to the exact time when the hernia reappeared he could not say.

Dr. DULLES said that when we bore in mind the comparatively mobile state of the contents of the abdomen we must see, of course, that the intra-abdominal pressure was exerted in all directions, and we might draw any number of arrows to indicate it; but there was only one direction of "*thrust*," which was the resultant of all the lines of pressure; and by supporting the abdomen, as he had suggested, by a firm and comparatively unyielding support, we turned the direction of that thrust into a line following the axis of the pelvis, and took it off the ring.

An Improved Obstetric Forceps.—Dr. W. S. STEWART read a paper on this subject. It was not his intention to enter into a general discussion of the merits or demerits of forceps; he would content himself with endeavoring to point out the advantages of having parallel handles, so that the application of either blade first could be made at will, as the exigencies of the case might require. The improvement in the instrument shown was not restricted to any special form of blade, but could as readily be applied to the straight as to the curved, its use being equally effective with either form. The first object, for which he had been most solicitous, was to have an instrument which could be used readily in presentations where it might be desirable to apply the second blade first, as sometimes in the second position of the head when jammed into the cavity of the pelvis and rotation to the antero-posterior diameter had been prevented by a narrow, contracted passage. In all such cases there was no difficulty in applying and adjusting the first blade, but occasionally it was impossible to apply the second, the only remedy being to reverse the order by applying the second blade first, running the risk of injury to both mother and child in the recrossing of the handles, in order that they might be locked before making traction. This he had overcome by having the handles made parallel to each other, and without overlapping, as in the ordinary instrument. Each handle had its own independent lock, the two being connected by a plain bar, which would admit of adjustment, no matter which blade was applied first.

To overcome the danger of slipping, and to secure the grasp on the fœtus, it was necessary to devise some method of reversing the direction of the handles, in order that traction might be applied. To accomplish this a double lever was devised, one part on each handle, and each working on the same pivot or fulcrum; to this the traction was applied, resulting in a power perhaps superior to anything that could have been expected. The compression of the fœtus was no longer in proportion to the power in the grip of the hand applied to the instrument, as in the cross-handles, but was regulated simply by the resistance to be overcome, and beautifully illustrated the mathematical relationship between the force and the resistance; consequently all fear of the slipping of the instrument was obviated, and the only force necessary to be applied was for the extraction of the fœtus, serving at the same time for compression and traction. The compression, however, was controlled by a shoulder on the toggle-joint, preventing any risk to the child, and its limit corresponding to the position of the blades of the cross-handled instrument when the handles were in apposition. Should there be any irregularity of application, and consequent difficulty in locking, he had devised a coned hub with a winged nut, which, though the handles might be at an angle of twenty degrees, enabled them to be adjusted.

The advantages of this improvement, as experience had demonstrated, were as follows: 1. The applicability of either blade first. 2. The impossibility of the slipping of the blades when properly applied. 3. Moderate and even compression, the degree of compression being regulated by the amount of resistance. 4. Greater facility for making traction.

Dr. **Longaker** thought that the only advantage of this modification was that the forceps was not so likely to slip. This was due to the parallelism of the blades, which was maintained even though the blades were not on opposite sides of the child's head, and in cases of very large heads, where it was difficult to recross the handles. There was in existence another device for the same purpose, a very simple one, a mortise lock at the end of the handle. Personally, he thought the forceps introduced by Sir James Y. Simpson could not be improved upon.

Dr. **Packard** thought that the difficulty of recrossing the handles ought not to be such as to render a special mechanism needful in order to avoid it. And he could not but think that the deviation of the blades from parallelism, however brought about, involved danger. In the old style of forceps—and the Hodge pattern had always seemed to him the best—each blade, used singly, was a vectis; one handle was a blunt hook, an instrument often of great value; the other was a sharp hook, covered, when not in use, with a steel cap screwed on. Such a combination of instruments, which was very convenient in a practice involving long distances, could not be, or at least was not, offered in the forceps presented by Dr. Stewart.

Dr. **George E. Shoemaker** said that, while this instrument was, no doubt, safe in Dr. Stewart's hands, it might not be so in those of others. That toggle-joint was a very powerful mechanical appliance, and the "shoulder" did not limit its action until the blades were quite close together. A moderately large head would not let them get so near together, and a very violent and harmful compression would result from even moderate traction upon the handle.

Dr. **Stewart** said that among the original forceps as represented in the older works were those with parallel blades, but he did not know of anything like this instrument. Of course, he did not claim all the credit of this invention, but shared it with the instrument-maker, who had carried out his ideas. He had been induced to have such an instrument made because of a number of complicated cases which had come under his care, especially a difficult one in which he had been called to assist a friend, who had been trying all night to get on the second blade of the forceps in a very narrow pelvis, where the child's head was jammed (in the right iliac region) and would not rotate. He advised using the second or female blade first, which was done with caution in recrossing the handles, and the delivery was speedily effected. He was not anxious to use forceps or to make lacerations. His rule was not to apply instruments as long as there was any rebound to the labor. There need be no fear of the toggle-joint permitting the blades to approach too closely, as the shoulder could be adjusted to any desired distance. If a wedge was all that was wanted, the toggle-joint was a better wedge than the cross-joint. The amount of compression was regulated by the necessities of the case. If the mother was left alone, she compressed the head of her child in her labor. In the cases (eight) where he had used this instrument he had not found a trace of its mark twenty-four hours after delivery. He believed that in cases of contracted pelvis where other instruments could not deliver, this could.

Book Notices.

L'iodisme. Par Elisabeth N. Bradley, Docteur en médecine de la Faculté de Paris; Membre de la Société zoologique de Paris. Paris: G. Steinheil, 1887. Pp. iv–168.

This book has a history. The ceremony of defending a thesis is the final exercise which is exacted of a Parisian medical student preparatory to receiving the college diploma. "L'iodisme" is the thesis upon which our American author was questioned with great shrewdness and ability by four of the leading professors of the *École de médecine*—Fournier, Gautier, Porchet, and Robin. Each of these gentlemen brought to the examining-room a copy of the book, with multitudinous interrogation-marks on the margin. With admiring frankness, after an hour and a half of trenchant questions, the examiners thus spoke: "You have been working a new field. We can not agree with many of your conclusions. Further investigations may lead either yourself ~~or us~~ to different views; but, meanwhile, you have presented to the college a thesis which does you uncommon honor, and for which we unanimously award you the maximum mark of merit."

Dr. Bradley's "Conclusions" at the end of the volume, fifteen in number, give a bird's-eye view of the subject-matter: 1. Free iodine is absorbed by the skin and by the mucous and serous membranes. It is carried throughout the body by means of the circulation and eliminated by every gland. 2. Preparations of iodine are not absorbed by the skin or the mucous or serous membranes until they have undergone a species of decomposition by which the iodine is set free. 3. In certain conditions of physical degeneration, especially in cardiac and renal troubles, or conditions of morbid nervous irritability, iodine may produce augmented physiological phenomena, together with signs of poisoning. 4. Symptoms of iodine poisoning manifest themselves by derangement of all the functions of the organism, intensified at any point of particular weakness. This condition of affairs may appear immediately or only after the prolonged use of iodine. In either case their onset may be gradual or abrupt. 5. The most constant symptom of iodine poisoning is an excessive acceleration of the pulse, which is feeble, compressible, and sometimes not discoverable in grave cases. 6. This morbid state of the pulse is unaccompanied by a corresponding elevation of temperature. The temperature may be normal or subnormal. 7. The cause of this lack of correspondence between the pulse and temperature must be sought for in some morbid condition of the nerve-centers themselves. 8. Disorders of the circulation are manifested above all by an œdema that may confine itself solely to the eyelids in slight cases, but which in severe ones extends to the glottis, the lungs, or the brain, or throughout the entire body. 9. The nature of the blood is altered, and hæmatosis does not take place naturally. 10. The circulatory disorders are followed by changes in the quantity and quality of the urine. Albuminuria, nephritis, and hæmaturia are of frequent occurrence, and follow a decrease in the amount of urine eliminated, or may be sequelæ of ischuria. 11. The nervous phenomena are those alike common to cerebral anæmia and cerebral hyperæmia, sometimes appearing as uræmic convulsions or uræmic coma, and again as hypochondria or general paresis. 12. The lungs participate in this condition of general disorder. There are pulmonary diseases that are more or less directly traceable to derangement of the circulation, such as bronchitis, œdema, hæmoptysis, etc. Frequently there are dyspnœa, irregular respiration, and apnœa. 13. Digestive abnormities take the form of anorexia or bulimia, nausea, vomiting, intestinal or gastric pain, sometimes diarrhœa or constipation. 14. The nutrition of the skin is defective, and there is passive dilatation following spasm of the capillaries. Eruptions of various kinds make their appearance, such as erythema, urticaria, papular and vesicular affections, and purpura. 15. The joints also may be attacked and become swollen and painful.

Rectal and Anal Surgery, with a Description of the Secret Methods of the Itinerants. By EDMUND ANDREWS, M. D., LL. D., Professor of Clinical Surgery in the Chicago Medical College, etc., and E. WYLLYS ANDREWS, A. M., M. D., Adjunct Professor of Clinical Surgery in the Chicago Medical College, etc. With Original Illustrations. Chicago: W. T. Keener, 1888. Pp. vi–111.

THIS little book aims to show two things: 1. The best methods of diagnosis and treatment of rectal affections known to the regular profession. 2. The secret methods of the itinerants, and their value.

In dealing with the first question the book is merely a useful compend of salient points in rectal surgery, not purporting to be at all complete. The greater part of the subject has been omitted, but what has been written is sound and true, and shows good judgment and some experience. It constitutes a manual of the rudiments of rectal surgery.

On the second point Dr. Andrews has spent a good deal of time, and seems really to enjoy his crusade against the traveling "rectal surgeon." He stands him up and knocks him down with never-ceasing delight. It is a good work, too, inasmuch as it shows the fallacy of the idea that these men have any secrets not known to the regular profession. But the traveling rectal specialist is dead, and this little *exposé* is a very fitting monument for him.

GENERAL LITERARY NOTES.

AMONG recent foreign publications we note the following:

ASSELIN & HOUZEAU, Paris.—S. Jaccoud, "Leçons de clinique médicale faites à l'hôpital de la Pitié (1886–1887)." (7*fr.*)

J. B. BAILLIÈRE & FILS, Paris.—N. Charles, "Cours d'accouchements donné à la Maternité de Liège." 2 vols. (15*fr.*) —— C. Vibert, "Étude médico-légale sur les blessures produites par les accidents de chemin de fer." (3*fr.* 50.) —— P. M. Simon, "Le monde des rêves; le rêve, l'hallucination et l'hypnotisme," etc. (3*fr.* 50.) —— B. Ball, "La folie érotique." (2*fr.*)

A. DELAHAYE & E. LECROSNIER, Paris.—Durey-Comte, "Contribution à l'étude du rétrécissement congénital de l'artère pulmonaire." (3*fr.* 50.)

O. DOIN, Paris.—Huguet, "Traité de pharmacie théorique et pratique." (18*fr.*) —— A. Peytoureau, "La glande pinéale et le troisième œil des vertébrés." (2*fr.* 50.) —— A. Corre, "Traité clinique des maladies des pays chauds." (15*fr.*)

J. GALLET, Lyons.—L. Meurer, "Des amputations à lambeaux cutanés."

G. MASSON, Paris.—"La syphilis et la prostitution dans leurs rapports avec l'hygiène, la morale et la loi." 2d ed. (5*fr.*) —— E. Willm and M. Hanriot, "Traité de chimie minerale et organique, comprenant la chimie pure et ses applications." 4 vols. (45*fr.*)

BUREAUX DU "PROGRÈS MÉDICAL," Paris.—Pinon, "Administration et comptabilité hospitalière." (1*fr.* 50.) —— E. Rolland, "De l'épilepsie Jacksonienne." (3*fr.*) —— A. Ferret, "De l'ophthalmie granuleuse (ophthalmie endémique d'Algérie)." (2*fr.* 50.)

J. ROTHSCHILD, Paris.—A. Coutance, "Venins et poisons." (10*fr.*)

G. STEINHEIL, Paris.—H. Barbier, "Étude clinique de l'albuminurie diphthéritique et de sa valeur séméiologique."

T. C. F. ENSLIN, Berlin.—M. Schulz, "Impfung, Impfgeschäft und Impftechnik." (3*M.*) —— L. Becker, "Anleitung zur Bestimmung der Arbeits- u. Erwerbsunfähigkeit nach Verletzungen." (3*M.*)

HEUSER, Neuwied.—Brennecke, "Beiträge zu einer Reform des Hebammenwesens." (2*M.* 40.)

L. HOFSTETTER, Halle.—P. Bunge, "Ueber Exenteration des Auges." (3*M.* 60.)

O. KLEMM, Leipsic.—L. Feldmann, "Ueber die Entwicklung organischer Erkrankungen des centralen Nervensystems bei Personen welche lange an schwerer Hysterie gelitten haben."

LAUPP, Tübingen. — C. Gerhardt, "Handbuch der Kinderkrankheiten." Part vi, 2d ed. —— C. Gerhardt, "Die chirurgische Krankheiten des Kindesalters." Part i. (12*M.*)

J. F. RICHTER, Hamburg.—C. Lomboroso, "Der Verbrecher in anthropologischer, ärztlicher und juristischer Beziehungen." (15*M.*)

F. C. W. VOGEL, Leipsic.—E. Lesser, "Lehrbuch der Haut- und Geschlechtskrankheiten." Part ii, 3d ed. (6*M.*)

L. VOSS, Hamburg.—C. Arnold, "Repetitorium der Chemie." 2d ed. (5*M.*) —— E. Harnack, "Die Hauptthatsachen der Chemie." (2*M.*)

A. ZIMMER, Stuttgart.—Lindenmeyer, "Praktische Anleitung zur Ernährung des Kindes."

FRATELLI RECHIEDEI, Milan.—N. De Dominicis, "Piccolo dizionario di terapia clinica ossia formulario clinico terapeutico." (5*l.* 50.) —— G. Berruti, "Formulario terapeutico ragionato." (5*l.*)

F. VALLARDI, Rome.—A. Guzzoni degli Ancarani, "Il taglio cesareo." (1*l.* 25.)

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

BY CHARLES STEDMAN BULL, M. D.

The Nature of the Disturbance of the Light-sense. — Treitel ("Arch. f. Ophthal.," xxxiii, 1), in reviewing the various theories that have been advanced upon this subject, states that Wolfberg's method of investigation does not establish the existence of an anomaly of the light-sense, but rather a disturbance of function which constitutes the nature of hemeralopia. According to views hitherto held, in cases of opacity of the media and largely in diseases of the optic nerve and retina only the space-sense and color-sense are affected, while the light-sense remains intact, and that in cases of hemeralopia in consequence of abnormal light-sense, disturbances of the space-sense and color-sense result. By the establishment of a more correct system of description of the disturbance of the light-sense, however, it is found that the disturbances of function of the various qualities of the visual sense always run a parallel course, and that they may arise in one of three ways: from cloudiness of the refractive media, from diseases of the optic nerve and retina, and from hemeralopia. The light-sense can not be interfered with independently of the space and color-sense, a fact not without interest with reference to the pathology of visual perceptions.

Two Cases of Primary Glaucoma in Young Persons, with Remarks on the Doctrine of Glaucoma in General.—Lange (*ibid.*) does not believe in the existence of inflammatory processes in the eye which last but a few hours or even minutes and then disappear without leaving a trace behind. But the long catalogue of symptoms met with in simple glaucoma may all be referred to disturbances of circulation. These disturbances of circulation and the symptoms evoked by them are only temporary and soon disappear, as long as the regulatory apparatus of the affected eye is in a position to equalize the disturbances of circulation occurring in the blood and lymph currents. Lange regards Mauthner's statement that increase of intra-ocular tension does not necessarily belong to the glaucomatous complex of symptoms as decidedly dangerous. It is, on the contrary, to be regarded as the pathognomonic symptom. Glaucoma may occur without excavation, as the latter, known as pressure excavation, is only developed at a relatively late stage of the disease. Lange has never failed to observe in the various forms of glaucoma increase of the intra-ocular tension, or at least demonstrable variations of tension. The so-called glaucomatous or overhung excavation of the papilla need not necessarily be ranked among the complex of symptoms of glaucoma. As regards the occurrence of cicatrization after iridectomy for glaucoma, Lange regards the filtration-scar as desirable, as it is a guarantee for the normal state of intra-ocular tension. What has hitherto been called glaucoma is no clear pathologico-anatomical idea, but is a more or less complicated complex of symptoms, the nature of which is very variable and by no means always understood. In the present uncertain condition of our knowledge on the subject it is well to judge of each theory of glaucoma by its application to some one case which it seems to explain; in other words, to give a certain amount of credence to all theories without favoring any one theory as explanatory of all cases of glaucoma. Lange denies the truth of the view that hypermetropic eyes are peculiarly prone to glaucoma. He reports on the refractive state of 163 cases of primary glaucoma in which there were 40 cases of myopia.

The Influence of Mydriatics and Myotics on the Intra-ocular Tension under Physiological Conditions.—Stocker (*ibid.*) draws the following conclusions from his experiments: 1. Atropine slowly diminishes the intra-ocular tension under physiological conditions—that is, in the eye of the animal under the influence of curare. 2. Cocaine diminishes the intra-ocular tension under normal conditions for about two or three millimetres. In the majority of cases the diminution of tension is preceded by a slight increase of tension. 3. Eserine increases primarily the tension in the physiological eye. This is not preceded by a diminution of tension, but subsequently the tension diminishes to a greater degree than it was previously augmented. 4. Pilocarpine diminishes the tension slowly in the physiological eye after the primary increase of tension has subsided. During the period of pressure variations, there may be observed an increase of the middle intra-ocular tension on both sides. The play of the pupil does not necessarily stand in any causal relation to the increase or diminution of the ocular tension. Both mydriatics—atropine and cocaine—exert no influence upon the radius of curvature of the cornea so far as this can be shown by the ophthalmometer. Both myotics—eserine and pilocarpine—during the myotic effect, shorten the radius of curvature of the cornea from 0·1 to 0·2 of a millimetre.

Spontaneous Absorption of Senile Cataract.—Meyer (*ibid.*) draws the following conclusions from his observations: Spontaneous absorption of cataract, not only in the young but also in elderly persons, has been occasionally observed, even when the entire lens has been cataractous. As regards the possibility of absorption of cataract with maintenance of the lens-fibers in an intact condition, Kunde's experiments on frogs have proved that this is possible. In the human lens, however, this has not been demonstrated; and, since in total cataract the clearing up occurs by absorption, the rare cases of retrogression of beginning cataracts must be ascribed to absorption, and not to a clearing up with maintenance of the lens-fibers. This process has been frequently observed in traumatic cataracts.

Overstrain of the Accommodation and its Consequences.—Schoen (*ibid.*) begins by calling attention to two factors which aid in the obstruction of overstrain: 1. The lamellæ of the suprachorioidea are the tendons of the meridional fibers of the ciliary muscle, are inserted in the sheath of the optic nerve, and consequently surround the entire vitreous. 2. The zonule is anatomically divided into an anterior and a posterior band, which, in the act of accommodation, possess different functions. In addition, there are a few median zonula fibers, which are inserted immediately behind the equator of the lens. The fibers of the ciliary muscle are functionally divided into three groups: external meridional fibers, internal meridional fibers, and circular fibers. The meridional fibers pass into the optic-nerve fibers, which form the external layer of the chorioid, and are inserted into the sheath of the optic nerve. The external meridional fibers are also inserted anteriorly around the canal of Schlemm. The internal meridional fibers have anteriorly a relatively movable insertion. The external meridional fibers compress the vitreous and draw the chorioid forward. The internal meridional fibers compress the vitreous, and draw the internal angle of the ciliary body backward. The circular fibers draw the internal angle of the ciliary body toward the axis of the eye. The result of the combined contraction is: movement of the inner angle of the ciliary body inward and backward, and compression of the vitreous with increase of tension. In accommodation for the distance, both leaves of the zonule are put on the stretch. The entire tension of the vitreous is brought to bear against the posterior surface of the lens. In accommodation for the near, the posterior fibers of the zonula relax, the vitreous approaches the lens in the spaces around it, and ceases to exert any material pressure. The anterior fibers of the zonule, in accommodation for the near point, are not relaxed, but rather put still more on the stretch. There is a "hyaloidea propria," or hyaloid membrane of the vitreous, which lies directly in contact with the posterior fibers of the zonule. In accommodation for the near point, the anterior zonula fibers run as far as the equator, pressed toward the anterior surface of the lens. The posterior side of the anterior layer of zonula fibers runs close to the middle zonula fibers from the equator onward. In accommodation for the distance, the equator of the lens lies free between the laminæ of the zonule. There exists a "tonus" in the fibers of the ciliary muscle, as in other smooth muscular fibers, especially in the external meridional fibers. In looking over a large number of cataract cases, Schoen found that nuclear sclerosis never existed without equatorial cataract, while he found ninety cases of equatorial cataract without nuclear sclerosis. The causes of overstrain of the accommodation Schoen places as follows: 1. Hypermetropia. 2. Presbyopia. 3. Normal low and high degrees of astigmatism. 4. Corneal maculæ. 5. Extremely fine work. 6. Customary close bending over one's work. 7. The use of too strong concave glasses. The consequences of overstrain of the accommodation are as follows; 1. Accommodative excavation of the disc, caused by pulling on the optic-nerve sheaths. 2. Plication of the lenticular capsule, and tendency to proliferation of the capsular epithelium by tension on the anterior and middle zonula fibers. 3. Inverted (*sic*) astigmatism. 4. Halo, or enlargement of the scleral ring. 5. Venous pulsation. 6. Blepharospasm. 7. Inflammatory irritation. As a final result: 1. Glaucoma simplex. 2. Cataract. 3. Acute glaucoma. The results of overstrain of the accommodation may be classified as follows: 1. Most favorable: the accommodation gradually yields. The patient receives the proper glasses, and the normal muscular tonus is prescribed. 2. The continuous overstrain leads to accommodative excavation, with glaucoma simplex as the result, equatorial and afterward total cataract. The accommodative excavation becomes glaucoma as soon as the visual acuity or the visual field begin to suffer. 3. A portion of the muscle of accommodation suddenly fails—the internal meridional and circular fibers—the lens falls forward, and acute glaucoma is present. Complete loss of tone of the ciliary muscle is very rarely met with.

Scotomata in Glaucomatous Diseases of the Optic Nerve.—Sachs ("Ctrlbl. f. prakt. Aug.," June, 1887) has found, in examining the visual field of twenty-seven glaucomatous eyes, five cases in which scotomata were present, and advises the careful examination of all such visual fields, as in his opinion scotomata are not so very rare in these cases. The position of the paracentral scotoma is such that, when it affects the right eye, it renders the reading of continuous type very difficult. Larger words were not glanced at. Objects which at a greater distance fell within the limits of the scotomata, were not recognized.

The disturbance in the color-sense in two of his five cases showed that sharp distinction is not always to be made in the color-sense between glaucomatous and atrophic diseases of the optic nerve. All five cases showed but very slight glaucomatous changes in the anterior segment of the eye, and the tension was sometimes normal, and sometimes only slightly increased. In two cases the scotoma did not appear until after the eyes had been operated upon. The one constant anatomical change which he found in these five cases with scotomata was the excavation of the optic disc. These scotomata bore a very strong analogy to the scotomata found in toxic amblyopia.

Uniform Notation of Astigmatism and of Cylindrical Glasses.—Armaignac ("Ann. d'oc.," May–June, 1887) offers the following propositions for consideration: 1. In every designation of astigmatism it should be stated whether the latter is objective (corneal) or subjective (functional). 2. In corneal astigmatism, as in static or dynamic refraction of the eye, that meridian should always be regarded as the principal one which has the least curvature—that is, the least refracting. 3. The direction of the astigmatic meridan should be indicated by the continuous graduation of the lower semicircle of the spectacle-rim placed on the nose of the patient, and the zero of the scale should be placed at the left extremity of the horizontal diameter, and 180 at the right extremity. 4. The notation should be the same for each eye. 5. All the instruments for measuring objective or functional astigmatism should be graduated in conformity with the preceding propositions. 6. In the description of compound astigmatism and sphero-cylindrical glasses we should write as follows: First the letters O D or O S, according as it is the right or left eye; then the spherical glass, preceded or not by the letters *sph*; then a comma or semicolon, and finally the degrees of astigmatism, and the figure of this astigmatism preceded by the sign + or —, according as it is positive or negative.

Spontaneous Absorption of Senile Cataract.—Kipp ("Amer. Jour. of Ophth.," June, 1887) reports a case of this nature in a man aged sixty-eight. He was first seen in 1873, and at that time was in good health. He had a nucleo-cortical cataract in each eye, the left eye being fully mature and the right eye almost mature. Perception of light and projection were good. There was no sugar in the urine. An extraction was done on the left eye in November, 1873; the wound healed rapidly and three weeks after the operation his vision was in L. E. $\frac{15}{40}$ with $+\frac{1}{3\frac{1}{2}}$, and he read Jaeger No. 1 with $+\frac{1}{2\frac{1}{2}}$. Twelve years later he was seen again, in November, 1885. He stated that he had no operation done on the right eye, nor had he met with any injury to that eye. He had noticed an improvement in the sight of the right eye during the last few years. An examination showed that in the right eye $V = \frac{18}{30}$ with $+\frac{1}{3\frac{1}{2}}$, and he could read the smallest print with $+\frac{1}{2\frac{1}{2}}$. The right eye appeared perfectly normal. There was no scar in the cornea or sclerotic. The anterior chamber was very deep. The iris was intact but tremulous. The pupil was small, free, and active, and, on being dilated by atropine, nothing but the capsule was found to remain, apparently intact and attached all around to the suspensory ligament. It was thin and transparent, except below, where a small, opaque whitish mass was adherent to its inner surface.

Rupture of the Optic Nerve at the Chiasm.—Post (*ibid.*) reports a rare accident of this kind occurring in a colored man, aged twenty-three, who accidentally struck his eye a violent blow against the fender of a carriage-wheel. When Post first saw him the eye was hanging by a large amount of tissue just outside the palpebral opening. The fender of the wheel had struck the lower lid just above the orbital ridge of the superior maxillary bone, and the blow had dislocated the globe, and also ruptured both lids vertically at the internal angle. The muscles and conjunctiva and orbital tissue were snipped away until the optic nerve was reached, and on making gentle traction the eye came out, bringing with it somewhat more than two inches of the optic nerve.

Hypopyon-keratitis treated by frequent Irrigations with Sublimate.—Hotz (*ibid.*) recommends that such eyes should be thoroughly washed with a solution of corrosive sublimate (1 to 5,000); then both eyes are to be covered with compresses wrung out of the sublimate; every half hour or hour the bandage must be removed, and the eye irrigated with the solution. Then the compresses and bandages are to be reapplied. Signs of improvement appear within twenty-four hours. The results are rapid healing, smooth translucent scars, and small loss of tissue.

Astigmatism.—Javal ("Rev. gén. d'ophthal.," May, 1887) reports that, from an examination of a very large number of astigmatic eyes, he concludes that there are at least three distinct species of regular astigmatism. One of these is present in eyes in which the vertical meridian has the greatest curvature. The second is met with in eyes in the reverse direction to the preceding. The third variety is met with more often in eyes in which the meridians are situated at 45°. In the first variety almost the entire amount of the astigmatism is in the cornea. In the second variety the deformity resides principally in the lens; here the total astigmatism is much greater than the corneal astigmatism. It is this variety of astigmatism which is so often the cause of glaucoma and cataract. The third variety is accompanied by a decentration of the globe sometimes as high as 20° or 25°.

Rheumatic or Gouty Cyclitis Minima.—Boucheron (*ibid.*) reports that the symptoms of this variety of cyclitis vary according as the arthritic cause attacks the ciliary muscle, the plexus of nerves, the vessels, the ciliary processes, or all the elements together. There may be pain on pressure in the region of the ciliary processes, or a spontaneous pain in the same region, intermittent in character and neuralgic in type. There may be accommodative troubles from insufficiency or excess, or irregularity of contraction of the rheumatic ciliary muscle, which can not be corrected by the use of any glass. There may be a slight and transient increase of the intra-ocular tension. There are sometimes floating bodies in the vitreous immediately behind the lens (ciliary exudation or exudative cyclitis); but this exudation only appears in very severe cases. Sometimes the congestion of the processes resolves itself in a slight hæmorrhage into the vitreous. There is a certain amount of photophobia. The duration of the attack may be very short, but relapses may be frequent. Locally, mydriatics and cocaine should be employed, and hot applications frequently repeated. These should be supplemented by the internal administration of sodium salicylate, salol, colchicum, or lithia.

The Shallow Anterior Chamber of Primary Glaucoma.—Priestley Smith ("Ophth. Rev.," July, 1887) considers that a shallow anterior chamber, though not always present in primary glaucoma, is a well-marked characteristic of that disease, and especially of its more acute congestive forms; an advance of the lens and iris toward the cornea usually accompanies the onset of the high tension. Still, he is unable to assert that the disease is actually induced by an obstruction in the circumlental space, impeding the normal flow of fluid from the vitreous to the aqueous chamber. An advance of the lens is the natural consequence of an increase in the quantity of blood in the interior of the eye. When the quantity of blood contained in the internal vessels of the eye is augmented, either by a quicker afflux or a slower efflux, compensation must be made, either by the expulsion of some other fluid from the eye or by overdistension of the sclera. There can be no doubt that, when the amount of blood in a healthy eye is increased, the escape of the aqueous is quickened so that a compensatory reduction is effected in the fullness of the aqueous chamber, the partial emptying of the chamber being accompanied by an advance of the lens. This advance seems to be inevitable when we consider that the turgescence of the uveal tract tells mainly upon the contents of the vitreous chamber. Under ordinary circumstances such variations in the depth of the anterior chamber are doubtless very small. Congestion of the head does produce some alteration of vision. The compensatory changes are usually slight, transient, and devoid of danger. But under certain predisposing conditions an advance of the lens may involve an attack of glaucoma. Certain experiments have shown that, when the lens is driven forward by a slight excess of pressure in the vitreous chamber, the ciliary processes are pressed forward against the base of the iris and the angle of the anterior chamber is closed so firmly as to arrest the escape of the aqueous fluid. The advance of the lens locks the outlet. This locking of the outlet after a certain quantity of the aqueous has been driven out is a preservative mechanism, for in the absence of such a check external pressure would squeeze out the whole of the aqueous, and endanger the internal structures. This is a physiological process; it is not glaucoma. It leads to glaucoma only in a small minority of cases, in which the outlet of the eye is predisposed to compression and occlusion. The usual predisposing cause is an insufficient circumlental space. In the youthful eye the lens is comparatively small, the anterior chamber deep, and the space at the disposal of the processes sufficient for their free expansion without undue displacement of the iris. As life advances, the conditions alter; the lens enlarges and encroaches on the space in which it lies; the anterior chamber grows shallower; the ciliary processes are brought into closer relations with the adjacent structures. A congestion of the eye which would be harmless in early life may in advanced life easily induce acute glaucoma. The vessels of the uveal tract become overfilled; the ciliary processes swell up; a part of the aqueous is expelled, and the lens advances; the angle of the anterior chamber is compressed. From this moment the intra-ocular pressure rises rapidly, and the obstruction at the outlet intensifies itself. The increased pressure within the eye embarrasses the escape of venous blood still further, and aggravates the swelling of the processes; the engorgement increases, the lens is driven forward still more forcibly, until not an atom more of the aqueous can be forced through the closed outlet; a shallow but firmly locked anterior chamber remains. The internal circulation of the eye is strangulated because the normal process of compensation by the aqueous is arrested. The external vessels dilate, and serum escapes in the direction of least resistance. This is acute glaucoma. The high tension depends more upon excess of blood in the eye than upon an excess of the intra-ocular fluid. The author considers that *glaucoma fulminans* is the expression of a maximum obstruction of the circulation; *glaucoma simplex*, of a minimum; the conditions of the eye which predispose to the disease being similar in the two cases. In the former there is strangulation sudden and complete; compensatory adaptation of the blood-vessels is impossible; an acute œdema limited by pressure ensues, and reveals itself by the extreme impairment of vision met with in such cases, by the cloudiness of the media, and by the chemosis of the conjunctiva. In the latter variety, on the other hand, the vascular disturbance is gradual and slight; the vessels adapt themselves to the slowly increasing pressure; the angle of the anterior chamber is more or less compressed, but not closed. A too exclusive study of histological changes has diverted attention from the physical principles involved in the problem. It is remarkable that dissertations on glaucoma are still published in which little or no value is attached to Leber's all-important discovery, the escape of the aqueous at the angle of the anterior chamber, or to the common characteristic of all forms of glaucoma, the obstruction of this outlet.

Miscellany.

The New York Academy of Medicine.—At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 19th inst., Dr. Gorham Bacon will read a paper entitled "A Case of Carcinoma of the Ear having its Origin probably in the Tympanum or Mastoid Cells," and Dr. J. O. Tansley will report "Two Deaths from Chronic Ear Disease."

At the next meeting of the Section in Theory and Practice of Medicine, on Tuesday evening, the 20th inst., Dr. L. Weber will read a paper on "Aneurysm of the Thoracic Aorta, with Remarks on the Pathology of Aortic Aneurysm," and Dr. J. W. Roosevelt will read a paper entitled "Pernicious Anæmia, with Reports of Cases and Autopsies."

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 22d inst., Dr. Grace Peckham will read a paper on "Wormian Bones in the Fontanelles, and their Effect in Childbirth," and Dr. W. E. Bullard will read a "Report of a Case of Placenta Prævia."

At the next meeting of the Section in Materia Medica and Therapeutics, on Friday evening, the 23d inst., the chairman of the committee on collective investigation, Dr. W. H. Thomson, will read a report on "The Combination of Cardiac Neurotics." A "Therapeutic Résumé" will be read, and new remedies will be shown.

At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 27th inst., after the presentation of patients, instruments, etc., there will be a discussion on "Therapeutics applied to the Upper Air-passages, with special reference to the Use of Patent Nostrums and Proprietary Medicines by the Laity and the Profession," in which Dr. F. A. Castle will present "Facts and Fallacies in the Use of Nostrums," and Dr. A. H. Smith will treat of "Legitimate and Positive Medication."

At the next meeting of the Section in Pædiatrics, on Wednesday evening, the 28th inst., Dr. A. Jacobi will read a paper on "Sepsis of the New-born," Dr. Andrew F. Currier will read a paper on "Icterus Neonatorum; its Relation to Sepsis," and Dr. J. Lewis Smith will report "Cases showing the Commencement, Progress, and Results of Sepsis in the New-born."

Faith-cure and Fatal Illness.—A correspondent writes as follows: "The matron of one of our charitable institutions is a believer in healing by faith. Recently she was attacked with acute pneumonia. The managers procured a trained nurse, and one of them, a physician, made frequent visits. The patient refused to take any liquors, wines, or medicines. On the fifth day her faith-curing pastor prayed with and anointed her. There was no perceptible change in her condition. No matter how slowly she convalesces, her recovery will doubtless be accredited to answered prayer. But if she dies, who shall bear the stigma? The physician disclaims all responsibility. Do his visits and dietetic suggestions constitute 'attendance'? And can he be compelled to write a certificate?"

We suppose that the physician could legally be required to certify in case of the lady's death, but his answer to the question as to when he had last seen her would reveal a state of things that would probably lead the Board of Health to order an inquest. Perhaps his statement as to that point alone would lead to the same result.

The State Medical Society of Arkansas will hold its thirteenth annual meeting at Fort Smith, on Wednesday, Thursday, and Friday, April 25th, 26th, and 27th.

The New York Hospital.—Dr. A. B. Ball and Dr. E. L. Partridge have been elected physicians to the hospital.

The Health of Michigan.—According to the State Board of Health's summary of returns for the five weeks ending March 3d, diphtheria was reported from forty places, scarlet fever from forty-five, typhoid fever from seventeen, measles from thirty-nine, and small-pox from one place. During the month of February there was a great prevalence of an affection variously termed a "common cold" and "epidemic influenza," characterized by an unusual involvement of the root of the tongue. It ran through families, neighborhoods, and schools.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 9th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending February 18th corresponded to an annual rate of 20·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 14·1, and the highest in Wolverhampton, viz., 29·4 in a thousand. Small-pox caused 30 deaths in Sheffield, 2 in Bristol, 2 in Leeds, 1 in London, 1 in Manchester, and 1 in Nottingham.

London.—One thousand six hundred and eighty-nine deaths were registered during the week, including 14 from measles; scarlet fever, 30; diphtheria, 18; whooping-cough, 122; enteric fever, 18; diarrhœa and dysentery, 8; and small-pox, 1. Diseases of the respiratory organs caused 487 deaths; different forms of violence, 39; and 2 suicides were registered. The deaths from all causes corresponded to an annual rate of 20·6 in a thousand. In greater London 2,147 deaths were registered, corresponding to an annual rate of 20·3 in a thousand of the population. In the "outer ring" 8 deaths from diphtheria, and whooping-cough, 46, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending February 18th in the sixteen principal town districts of Ireland was 28·3 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 12·7, and the highest in Drogheda, viz., 93 in a thousand. In Dublin 175 deaths were registered, including 1 from measles; whooping-cough, 4; scarlet fever, 7; diarrhœa, 2; typhus, 1; diphtheria, 1; erysipelas, 1; and mumps, 1.

Scotland.—The deaths registered in eight principal towns during the week ending February 18th corresponded to an annual rate of 22·5 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 13·5, and the highest in Paisley, viz., 30·4 in a thousand. The aggregate number of deaths registered from all causes was 568, including 8 from measles; diphtheria, 13; scarlet fever, 5; whooping-cough, 21; fever, 4; and diarrhœa, 11.

Lima.—The United States minister, in his dispatch dated January 25, 1888, transmits copies and translations from two daily papers; also a copy and translation of an official cablegram from the Peruvian consul at Guayaquil; also a copy and translation of a decree issued by the Minister of Justice, Señor Garcia, that the shipping from Guayaquil be submitted to five days' quarantine, with a medical officer on board. The following are the copies:

VALPARAISO, *January 13, 1888.*

Valparaiso, yesterday, 55; deaths, 20. Santiago, yesterday, 46; deaths, 16. Peruvian consul communicates cholera at Concepcion; Talcahauno and neighboring ports, probable infection. In southern provinces it continues. Cholera at Salta, Argentine.

VALPARAISO, *January 17, 1888.*

Valparaiso—attacked, 60; deaths, 36. Santiago, 35; deaths, 11. Continues south. Suspicious cases at La Serena.

GUAYAQUIL, *January 15, 1888.*

With change of season yellow-fever cases have appeared. Steamships Colombia and Pizarro carry foul (patente) bill of health.

LIMA, *January 17, 1888.*

In to-day's session the board agreed that the shipping from Guayaquil be submitted to five days' quarantine, with medical officer on board, the Callao board being charged with the ordering of the measures they may deem most proper for the fulfillment of this accord.

Santiago de Cuba.—The sanitary inspector reports, for the week ending February 25th, that "the sanitary condition of this city has been good for this week. We have no contagious or infectious maladies to record, either in the towns or the harbor. Only one case of yellow fever at the military hospital, ending fatally, and no other cases of it in the hospital. . . . Tetanus enters largely into the mortality of the week. This is owing to the changeable state of the temperature. The case of the adult who died of it is curious in this respect, that he was attending on a sick horse that died of tetanus. If the theory of the equine origin of tetanus is true, then this case seems to prove its truthfulness."

Callao.—The United States consul, in his dispatch dated February 11, 1888, regarding cholera, states that, "under date of the 2d instant, the Peruvian medical representative cables that at Valparaiso there were only 17 new cases and 4 deaths. At Santiago, 27 new cases and 7 deaths. In the southern towns of Curico, Parrol, and Concepcion disease declining, and in the north, at Serena and Chalinga, only a few cases. From other information received the last-mentioned cases did not present the characteristic symptoms of Asiatic cholera, and little alarm was manifested. The Peruvian consul at Guayaquil reports that yellow fever at that place had almost disappeared. The Honorable Mr. Buck, United States Minister to Peru, arrived here by the steamer from Panama on the 30th ultimo, and, owing to one fatal case of yellow fever which occurred on board the vessel, the passengers have been kept in strict quarantine until to-day, when they were allowed to land. The public health of Lima and Callao continues to be satisfactory."

Demerara.—The United States consul, under date of February 14, 1888, states that "yellow fever has broken out in this city, but, fortunately, very few cases have occurred. Up to date 10 cases have been reported, 8 of which have proved fatal. The last death occurred on the 10th ultimo. Should no further cases occur, in a few days this consulate will issue clean bills of health."

Buenos Ayres.—One thousand one hundred and thirty-seven deaths are reported for the month of December, 1887, including small-pox, 95; enteric fever, 28; scarlet fever, 2; and diphtheria, 68.

Bordeaux.—Six hundred and twenty-nine deaths are reported for the month of January, 1888, including small-pox, 3; enteric fever, 30; scarlet fever, 1; and diphtheria and croup, 13.

Havana.—The sanitary inspector reports 608 deaths for the month of February, 1888, including yellow fever, 7; small-pox, 140; enteric fever, 10; so-called pernicious fever, 10; diphtheria, 6; and croup, 5. "Although small-pox still prevails pretty actively in many places of the middle and western departments of this island, the disease, as far as mortality from it furnishes a criterion to judge by, is diminishing considerably in Havana and its immediate vicinity. It is said, however, that the epidemic is milder in type than it was a month or two ago, and, as no report of cases is made to any person, board, or body, it is not easy to even approximate at all closely to the actual number of cases existing. Yellow fever has within the last few days shown a little increased activity, and has made several victims among employees of different establishments, who have in the main been sent to the Quinta de los Dependiente. As usual, several cases exist in the military hospital, which is located contiguous to one of the commercial wharves of this port."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow	February 18.	545,678	262	..	....	....	....	1	4	6
Warsaw	February 11.	439,174	220	..	....	9	....	....	8	5
Calcutta	January 21.	433,219	262	19	....	....	....	....	....	1
Amsterdam	February 11.	389,916	240	..	....	....	....	2	....	4
Rome	January 7.	382,973	216	..	....	6	....	1	2	4
Munich	February 4.	275,000	152	..	....	....	....	....	....	6
Palermo	February 19.	250,000	129	..	....	....	....	3	2	5
Belfast	February 18.	224,422	124	..	....	....	....	....	1	2
Havana	February 25.	208,000	147	..	4	29	....	2	....	....
Leipsic	February 18.	170,000	63	..	....	....	....	1	2	2
Trieste	February 11.	154,500	117	..	....	4	...	....	1	3
Toronto	February 25.	130,000	23	..	....	....	....	....	....	2
Bremen	February 11.	122,000	39	..	..	....	....	....	1	....
Havre	February 18.	112,074	104	..	....	4	....	1	....	....
Barmen	February 18.	109,000	40	..	....	....	....	....	....	1
Mayence	February 11.	65,701	26	..	....	....	1	....	1	1
Cienfuegos	February 27.	35,464	37	..	....	28	....	....	....	....
Guayaquil	February 6.	30,000	62	..	4	16	....	16	....	....
Guayaquil	February 13.	30,000	74	..	7	11	....	23	....	....
Sagua la Grande.	February 18.	15,605	12	..	....	8	....	....	....	....
Sagua la Grande.	February 25.	15,605	10	..	....	6	....	....	....	....

UNITED STATES.

The medical officer in charge of the United States quarantine station at Sapelo Sound reports that the German bark Vesta, sent to that station on the 25th ultimo as suspicious, though dirty and arriving from a small-pox infected district, was not herself infected, and was therefore only detained for one precautionary fumigation. The disease on board, he reports, was bilious remittent fever.

Key West.—The medical officer in charge of the United States Marine Hospital at Key West reports, under date of February 29, 1888, a total of 7 cases of small-pox, with 2 deaths, 3 recoveries, and 2 still sick. A small pest-house is being erected by the county board of health. He also reports, under date of March 3d, that the municipal authorities have recently passed an ordinance establishing a city health department, and reviving the office of city health officer. A number of the business men of the city have also had a meeting to organize an auxiliary sanitary association for the purpose of purchasing and operating odorless excavating machinery. It is estimated that there are three thousand privy-vaults upon the island, consisting mainly of excavations in the ground, not water-tight, and often in proximity to leaky cisterns upon the same level.

THERAPEUTICAL NOTES.

Some Uses of Cannabis Indica.—Surgeon-Major J. F. P. McConnell, M. D., M. R. C. P., of the Bengal Medical Service ("Practitioner," Feb.

1888), recommends the use of cannabis to overcome loss of appetite consequent upon exhausting diseases, such as prolonged fevers, diarrhœa, dysentery, phthisis, etc. For this purpose he uses from five to ten minims of the tincture or from a quarter to half a grain of the extract.

In dyspeptic diarrhœa and in tropical diarrhœa (hill diarrhœa, the *diarrhœa alba* of the tropics), in which the secretion of bile is defective, cannabis is very efficient during the early months of the affection, but the author thinks that in advanced cases organic lesions of the liver occur which no treatment can reach. In this disease he gives, three times a day or oftener, at first ten minims of tincture of cannabis, then fifteen, twenty, twenty-five, or even thirty, together with ten grains of subnitrate of bismuth, half a drachm of mucilage of acacia, twenty minims of compound spirit of chloroform, and an ounce of cinnamon-water or peppermint-water. The unpleasant effects of the drug (such as headache, giddiness, and hallucinations) may be prevented to a great degree by giving it after meals.

Finally, the author recommends the drug as a hypnotic in chronic heart disease and chronic Bright's disease—from fifteen to twenty minims of the tincture, together with ten grains of hydrate of chloral and thirty grains of bromide of potassium. He has assured himself by experiment that the effect is largely owing to the cannabis.

Beta-naphthol in Ozæna and Purulent Rhinitis.—Rualt ("Riforma medica," 1888, No. 13; "Internationale klinische Rundschau," Jan. 29, 1888) has found β-naphthol of much service in ozæna and purulent rhinitis. Twelve parts of β-naphthol are added to 84 parts of 90-per-cent. alcohol; a teaspoonful of the mixture is diluted with a quart of lukewarm water when the remedy is to be used, and the nasal passages are irrigated with it. The irrigation causes some pain, but it is only transitory. With very sensitive patients a weaker solution may be used or, what is better, the parts may previously be sprayed with a solution of cocaine of from 2 to 5 per cent.

Guaiacol in the Treatment of Phthisis.—Dr. H. Sahli ("Correspondenzbl. f. schweizer Aerzte," 1887; "Fortschritte der Med.," 1888, No. 3) recommends guaiacol (pyrocatechinmethylether), the chief constituent of creasote, as a substitute for that liquid in the treatment of phthisis. On account of its irritant properties, it must be largely diluted. The author employs the following formula:

Guaiacol	1 or 2 parts;
Distilled water	180 "
Alcohol	20 "

The mixture should be kept in a black bottle. From a teaspoonful to a tablespoonful may be given in a glass of water two or three times a day. It may also be taken in cod-liver oil.

A Deodorizing Injection for Uterine Cancer.—Duchesne ("Nouveaux remèdes," Feb. 8, 1888) credits Chéron with this formula:

White vinegar	300 parts;
Tincture of eucalyptus	45 "
Salicylic acid	1 part;
Salicylate of sodium	20 parts.

From one to five tablespoonfuls, added to a quart of tepid water, to be used daily for vaginal injections.

Bromidia.—The "Alienist and Neurologist" says of Battle & Co.'s bromidia that there is no better mixture for use under the circumstances in which its ingredients are indicated, but that the directions accompanying it (not to exceed three or four doses in the course of twenty-four hours, and to give it by preference during the evening or night) ought to be strictly followed. In many cases in which bromidia is used, our esteemed contemporary thinks that the amount of bromide of potassium contained in it might well be doubled, according to the following formula:

Bromidia	2 drachms;
Bromide of potassium	30 grains;
Syrup of balsam of Tolu	3 drachms;
Peppermint-water	to 1 ounce.

To be given at 8 or 9 P. M., well diluted with water, and repeated once during the night if necessary.

Rectal Injections of the Vapor of Ether in Lead Colic have proved very satisfactory in the hands of Dr. A. Torre, of Brest ("Bull. gén. de thérap.," Feb. 15, 1888), calming the spasmodic state and rendering the action of purgatives less irritating. A case is mentioned in which the vapor of fifteen grains of ether sufficed to produce such results.

ANSWERS TO CORRESPONDENTS.

No. 159.—1. In our issue for November 14, 1885, page 545. 2. Dr. Kelsey's book, published by William Wood & Co.

No. 160.—We presume that the work you have in mind is one that is being prepared under the direction of Dr. Sajous, of Philadelphia, to be published by Mr. F. A. Davis, of that city.

No. 161.—We know of no way to test the accuracy of a clinical thermometer except that of comparing it with a standard thermometer or with one that has recently been so compared. It is not enough to compare the instruments at a single temperature or at the two extremes of the scale; it is best to make a comparison for each degree, the temperature of the liquid in which both bulbs are immersed (at the same level, regardless of the length of the tube) being gradually raised or lowered by adding small amounts of a hotter or colder liquid. It is convenient to fasten both instruments to a card for the purpose.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, March 24, 1888.

Original Communications.

ON PREVENTIVE TREATMENT IN PRIMARY SYPHILIS.*

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There is no more important question in the whole therapy of syphilis than one that confronts us at the very outset of the disease and relates to the possibility of preventive treatment in the primary stage. The poison of syphilis having once been effectively inoculated, are there any means in our control by which we may hope to prevent the impending constitutional effects? By preventive treatment is not necessarily meant abortive treatment, but it embraces all measures tending in any degree to abridge or mitigate the subsequent course of infection and its effects on the constitution. The utility of any such measures will depend, first, on what the nature or essential quality of syphilitic infection is, and, second, on the special status of this infection during the primary stage of the disease. But of syphilitic infection we have no positive knowledge, either as to what constitutes its essential element or what is its mode of progress. As to these we are still at sea, vexed by the most contradictory opinions and the most discordant experiences. Often has it seemed, with the rapid advances in bacteriology, together with our increasing knowledge of the minute anatomy of the syphilitic products, that the secret was on the point of being revealed, while the reported successes of Auspitz and his followers in ectrotic treatment encouraged the hope that we were on the eve of a new and better era in the management of syphilis. The revelation has not yet come; the hope is still deferred. But, so long as the problem remains unsolved, it is no time to pause. Until more light is granted we must make the most of what there is. The question, in the form in which it immediately presents itself, may be stated as follows: Are the indications thus far afforded by our imperfect knowledge of syphilitic infection such as to render any attempt at preventive treatment in the primary stage of the disease unavailing and absolutely hopeless? For that is what many maintain.

There are two modes of approaching the question—one theoretical, the other empirical. Were it certain, on the one hand, that during the primary stage of syphilis the pathological conditions were such as to afford a probability of successful abortive treatment, no number of failures would justify remitting continued efforts in this same direction, while, on the other hand, our course would be equally plain could we but have the assurance that in any, however few, instances such treatment had been attended with a definite measure of success.

In considering the indications furnished by the pathological conditions in syphilis, the first inquiry is naturally directed to the essential cause of the disease, to that unseen agent to which all the manifestations of syphilitic infection are due, and which we call the "syphilitic virus." Here all is hypothetical. The best we can do is to accept provisionally that view by which most is explained. No theory yet proposed explains the observed phenomena of syphilitic infection so satisfactorily as that which attributes them to the presence and growth of certain specific micro-organisms in the tissues. Thus far, however, the microbe of syphilis has not been positively identified, and the parasitic theory serves only as a good working hypothesis. But, even were it fully established that syphilis is a parasitic disease, due to known forms of bacilli or micrococci which could be cultivated outside the body and be subjected to various experiments, it is by no means certain that the answer to the question of preventive treatment would be affirmative. Although antiseptics would then have a definite object which they do not now possess, their availability would yet remain to be determined. Judging from experience in such diseases as tuberculosis and contagious anthrax, in which specific micro-organisms have been identified, the success of antiseptic treatment is far from assured. But the conditions in syphilitic infection are peculiar. Not only does the inoculation usually take place at a single point where it is freely accessible to manipulative procedures, but there are indications in the slow and gradual progress of the disease that general infection does not take place immediately, but that there is a temporary sojourn of the virus in the region where first implanted. All the more obvious facts in the clinical history of the initial stage of syphilis seem to point to the entirely local character of the primary lesions. After the virus of the disease has been inoculated there ensues a period of apparent quiescence of several weeks' duration, when, little by little, there begins the formation at the inoculated point of a neoplastic, indurated growth that essentially consists of inflammatory granulation tissue, answering in its general character to an irritative lesion provoked by the presence of a foreign and disturbing element. This growth is the "initial lesion" of syphilis. Simultaneously with this, or shortly following its first appearance, the nearest lymphatic glands become swollen and indurated in consequence of a cellular growth of a corresponding character to that of the initial lesion. These local manifestations remain for a considerable period the sole evidences of disease, till finally, at the expiration of this period, with more or less sudden onset, the symptoms of general or constitutional syphilis make their appearance.

The simplest and, it seems to me, the most rational explanation of this course of events is that the virus, when first implanted in the tissues, does not immediately pass into the general circulation, or what portion does is insignificant; that, mainly at least, it is at first confined to the spot where the future chancre is to develop; that here, finding a favorable soil, it grows and slowly increases till its intrusive presence becomes a source of offense to the tissue harboring it, and gradually inflammatory reaction results. From this source of generation the virus contaminates, sooner or later, the nearest lymphatic glands, which in turn become other sources of supply, till, finally, from these multiple foci the whole organism becomes infected. According to this, the main route to the general circulation is by way of the lymphatics and through the *receptaculum chyli.*

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* Read before the New York Academy of Medicine, March 1, 1888.

To this view Auspitz has opposed certain objections. Within the initial lesion, he says, the lymphatics show comparatively little change, while the walls of the blood-vessels are commonly implicated and their caliber is often occluded. The so-called "lymphatic cord" that is often felt along the dorsum penis is attributed wholly to the thickened blood-vessels. Furthermore, it is objected that, between the chancre and the *receptaculum chyli*, the chain of indurated glands has not yet been shown to be continuous and complete.

That the lymphatics in the primary induration are but slightly affected may, perhaps, be the very reason why their absorbent function is not disturbed. Through their patulous channels the virus would find a way of ingress which is denied it by the occluded blood-vessels. Moreover, the intimate connection of the adventitia with the lymphatic system would easily account for the marked implication of the vascular walls and for the "lymphatic cord."

The objection that the lymphatic chain is not continuous seems to be based mainly upon three pathological specimens preserved in the *Musée de Lourcine*, and described by Fournier. They were all taken from women in the primary stage of syphilis with genital chancres, and they displayed the condition of the inguinal and iliac glands. No enlarged glands occurred beyond the point where the hypogastric is given off. Between this point and the crural arch, in all of the specimens, there were a number of affected ganglia, showing about as much enlargement as those below in Scarpa's triangle. Obviously enough, this represented the condition for a certain period of the disease. How long the disease had lasted when the patients died is not stated. It is possible that, had the process continued, the lumbar glands would have become affected next, and so on regularly to the *receptaculum.* Or, on the other hand, even supposing that general syphilis had already supervened, the absence of a continuous chain would not necessarily show that the virus had traveled by another route than the lymphatic. It is not the view maintained here that the lymphatic ganglia serve as barriers to the general infection in the sense that they can not be traversed till they are themselves affected and diseased, but rather that each as it is infected in turn becomes a new generator of virus, and when all of the sources of supply, whether few or many, have delivered more of the poison into the blood than the system can tolerate, it is then that constitutional syphilis declares itself.

Thus far indeed the pathological conditions seem to imply that in syphilis the disease advances by way of the lymphatics in a manner that is analogous to the diffusion of the malignant tumors. Whether, however, in syphilis the contamination advances by such regular approaches from one gland to another that any definite interval can be said to exist between the affection of one gland and that of the next in succession is very doubtful. Usually as soon as the inguinal adenopathy can be made out at all, at least three distinctly enlarged glands can be felt. Whether several are really affected simultaneously at the start—and, if so, how many—we have no definite knowledge. With regard to the specimens above referred to we may surmise that the affection of the iliac glands took place subsequently to that of those in the groin, but of this we have no evidence.

In the indications thus far presented we find nothing incompatible with the supposition that during the primary period of syphilis the disease is localized within the vicinity of the point of inoculation. But the view is current among many syphilographers that the manifestations of this period are always anticipated by infection of the general system, of which they are only prodromal symptoms. According to this position, directly upon its inoculation the syphilitic virus passes into the general circulation. The apparent quiescence at the point of inoculation is real quiescence. The incubation pertains not to any materies morbi in that vicinity, but to something in the blood, and the initial lesion is the first tangible sign of the blood disease, reflected in some arbitrary and inexplicable manner to the spot where the virus effected its original entrance. It is very strange, it must be observed, that the second transit of the virus through this region should produce such decided effects, while at the first the tissues suffer its passage and betray no resentment whatever.

Two facts are alleged concerning the primary stage of syphilis, upon which the theory of the symptomatic character of the initial lesion is based. The first is that an individual who has been inoculated with syphilis has always acquired immunity from any subsequent inoculation of the syphilitic virus before the chancre develops, and the second, that extirpation of the chancre does not prevent the regular course of the disease. The reasoning from these propositions appears to be as follows: Both of these facts imply that, at the time the chancre develops, the disease is already constitutional; but if the constitutional disease suffices to annul the effect of a second inoculation it should also prevent the development of any direct effects from the first inoculation, and therefore (to escape the dilemma) the initial lesion is regarded as a symptom of the general disease.

That there is a period within a certain time after inoculation when the tissues are not refractory to a second implantation of the virus is shown by the fact that, when a second or third inoculation takes place within a short period from the first exposure, successive and multiple chancres result. The immunity therefore is not established at once. But it is maintained that after the chancre has once formed constitutional infection is an accomplished fact and the immunity is then complete. In verifying this point one important consideration should not be lost sight of—viz., the length of time it requires for the chancre to develop. The second inoculation might have its effects forestalled and prevented by constitutional infection intervening before the completion of its incubation, even though at the time of this second inoculation no such general infection existed.

While it is true that, as a general rule, autoinoculations and reinoculations in the primary stage fail to produce any perceptible effect, a sufficient number of cases have been reported to show that the rule is not invariable. Two such cases were published in 1882 by Bumm, of Würzburg, and several (four or five) were reported by Bidenkap and Boeck. In all of these cases the autoinoculations were practiced within six weeks from the time of the first exposure and before there were any general evidences of disease. They suffice to show that the presence of the syphilitic chancre is no positive proof that the bearer is insusceptible to the effects of a second inoculation, and, if immunity is the test of general saturation with the syphilitic poison, we must conclude that the chancre is not positive evidence of constitutional disease, and hence can not be its symptom.

It must be admitted as a fact, however, that autoinoculations and reinoculations during the primary period of syphilis, as a rule, produce no specific effect except when performed very early. Reinoculations following the first exposure at a short interval are tolerably sure of being successful, while autoinoculations from the chancre are very rarely so, and then only, in all probability, when made sufficiently early to allow their periods of incubation to elapse before the advent of the secondary stage of the disease. It may be conceded, furthermore, that in the majority of cases immunity *does* precede what is known as secondary syphilis. From the materials at our command it seems not improbable that a slight degree of general infection may exist in primary syphilis which, though sufficient to confer immunity upon the individual from any second installment of the virus, is yet insufficient to cause general disease. It does not suffice to arrest the progress of the growth and dissemination of virus at those points where depots have already been established, but it may act as an effective injunction against the establishment of any new depots. We have a notable illustration of such an immunity in the case of the mother of a syphilitic child who, notwithstanding she may at no time present any outward sign of syphilitic infection, is immune from contagion and suckles her child with impunity. Moreover, there is nothing in the view just proposed that does not accord with the results of preventive inoculation which have been achieved, notably by Pasteur, in other infectious diseases. Practically these results depend upon the fact that the infection that is superinduced artificially is in a mitigated form. It may be presumed that the attenuating process to which the virus is subjected before its inoculation so modifies its power of reproduction that when it enters the body it reproduces itself only to a comparatively slight extent, which, though sufficient to modify the tissues in such a way as to render them insusceptible to another inoculation of the same virus, causes no manifestation of virulence. Is it not possible that in the initial stage of syphilis similar conditions prevail? If the nests of infection in the vicinity of the point of inoculation could at an early period be exterminated, is there not some hope that that mitigated form of an infectious disease which is evidenced only by the insusceptibility to reinoculation might be preserved, and the further progress of the disease be arrested then and there?

The results thus far of ectrotic treatment have afforded but little encouragement. It is affirmed to be the rule in infectious diseases generally that take their origin from a local point of inoculation that it is impossible by cauterization to prevent general infection. Such was Cleve's experience after cauterizing vaccination punctures with nitrate of silver. Aimé Martin had a somewhat different experience. He cauterized the inoculated points with Vienna paste in from one to twelve hours after vaccination. No proper vaccine pustules were formed in any of the seven cases reported, but in only two of these was revaccination successful. Bouley and others in the Veterinary School at Alfort found that the time required for absorption of the virus of various infectious diseases was very short. Horses were inoculated with glanders, and the place was excised one minute after, but without preventing the disease. Sheep also were subjected to a similar experiment for variola ovina, and with like result. Between these diseases, however, and syphilis it is hardly fair to make comparison. In syphilis all the obvious signs point to a much slower development of the disease.

As an offset to the above-mentioned experiments, we may refer to certain results reported by Sigmund, of Vienna, which would seem to be clearly in favor of abortive cauterization immediately after syphilitic inoculation. Of fifty-seven patients who presented themselves with abrasions after suspicious connections, thirty-five were cauterized, and of these only ten developed syphilis. Out of the twenty-two not interfered with, eleven became syphilitic. Moreover, there were indications that the earlier the cauterization was practiced the better the chance of its success. Of the thirty-five patients cauterized, in twenty-four it was from the first to the third day following the suspicious exposure, and of these only three became syphilitic; of eleven cauterized from the fifth to the tenth day, seven became syphilitic, which would tend to show that after the fourth day the chances were against the success of the operation.

Most discouraging is the well-known case reported by Berkeley Hill: A patient who presented himself with a torn frenum twelve hours after a sexual encounter was cauterized with fuming nitric acid. On his return a month later the cicatrix had become indurated and syphilis followed. A possible loop-hole of escape may be found in the supposition that the patient had exposed himself to the disease during his month of absence. But there is evidence enough to show that the virus of syphilis passes beyond the reach of caustics within a short time after its inoculation. *A fortiori*, by the time the chancre is developed it should be still further removed.

But, though inaccessible to caustics, it has been hoped that the infected part might be included in a free incision. Upon this slender chance have been based the hopes of the army of experimenters who, within the past few years, have, with the most exasperating diversity of result, reported excisions of the syphilitic initial lesion. It is not my purpose to enter upon a critical analysis of these results. Such a task would be impossible as well as profitless. Suffice it to say that, in a considerable percentage of the many cases reported (and there have been hundreds of them), the occurrence of constitutional syphilis was apparently prevented. There is so little uniformity in the different results compiled that, as statistics, their utility is very doubtful. So great is their disparity that one can not avoid the suspicion that in these investigations the "personal equation" has been a disturbing factor. Two elements of doubt mar their statistical value. The first relates to the possibility of error in diagnosis. The second concerns the uncertain factor of prognosis. How many cases of true syphilitic infection and how many real syphilitic chancres are there which are never followed by any manifestations whatever of constitutional disease, or by manifestations so slight and insignificant that they easily escape all notice? There is sufficient evidence, familiar to any experienced observer of the disease, that in many instances the duration of syphilis is limited, so far as outward symptoms are concerned, to the primary period. What the proportion of these cases is no one knows, but it is certainly large enough to entitle it to consideration in these statistics.

It can not be said, then, that the results of excision make conclusively either for or against the hypothesis of the local character of primary syphilis. But, even were it shown that extirpation of the chancre did not prevent the course of general infection, it would not thereby be proved that the initial lesion was merely a symptom of the constitutional disease, nor would it prove that the syphilitic process was not essentially local in this period. We must not lose sight of the rôle played by the lymphatics. As a manifestation of primary syphilis, the chancre is hardly of less importance than the indolent adenopathy. That the indurated lymphatic glands in the vicinity of the initial lesion are contributory sources of infection there is little reason to doubt. Were the initial lesion removed they would doubtless still suffice to contaminate the system. To the production of syphilis it is only necessary that the germs of the disease effect a lodgment somewhere in the tissues. The seed must then take root, and when it once begins to germinate its potentialities for infection may reasonably be supposed to be the same as those of the original implantation at the point first inoculated.

While, then, it can not be affirmed of any period in the course of the malady that the disease is strictly limited to the site of the initial lesion, the proposition that syphilis is essentially a local disease remains still uncontroverted. The periods of incubation preceding and following the development of the chancre correspond to what we may provisionally term a process of germination that takes place *in situ* and not in the general circulation. During the forming stage of the chancre, during the period of apparent quiescence, and before any changes at the point of inoculation are outwardly perceptible, certain alterations are doubtless in progress: the round cells are accumulating, the walls of the blood-vessels are being infiltrated and occluded, till at length the initial lesion is formed. Meanwhile it is not unlikely that certain infectious elements find their way in small quantity into the general circulation. A few such germs might possibly be at once destroyed or eliminated from the economy, but they would gradually increase as the initial lesion and the affected glands continually added to the supply, and, sooner or later, their influence upon the tissues would be such as to superinduce that condition or modified infection which suffices to secure immunity against reinoculation, but is insufficient to elicit constitutional symptoms. Finally, re-enforced by larger and larger incursions of infectious matter, it accumulates in the blood in such excess that the organism, unable to tolerate it longer, reacts with the characteristic manifestations of general disease.

If this view of the course of syphilitic infection is the true one, and it appears to meet the conditions fairly, so far as we can comprehend them at present, what hope does it afford of preventive interference? It was intimated at the start that an answer to this question might be equally valid whether based on theoretical or on empirical grounds. Empirically, the answer is so ambiguous that we have been forced to have recourse to theory, and here we find the omens not unpropitious. An infection whose limits are circumscribed and more or less definable is a very different thing from one that has already taken possession of the entire organism. In the ordinary affairs of life it is deemed a much simpler task to remedy an evil at the outset than after it has gained headway and become confirmed. But in the first stage of syphilis most authorities advise only expectant treatment. Even those who admit that constitutional treatment may delay the advent of the secondary symptoms, deny its utility on the ground that the delay does not prevent the disease from displaying ultimately the same virulence or malignancy that it would if left alone, and, furthermore, by so much longer must we await the confirmation of our diagnosis. "We may be mistaken," say our masters; "wait a little till we are sure." It is only a little fire now, by and by it will be a conflagration. "If it turn out to be syphilis, then we will begin our assault." Then mercury! Mercury externally and mercury internally. Mercury on the flank by inunction, mercury in the rear by hypodermic injections. Sometimes as an alterative, then a depletive, now a tonic, and again an antiseptic, but always mercury, and mercury for four years. Admitting, as indeed we must admit, that it is the sovereign and unrivaled remedy for constitutional syphilis, must all the virtues of this wonderful drug be reserved for the secondary stage? Is there no alternative but to wait for the disease to take possession of the entire economy before we attack it? During the forty days' sojourn of the enemy in its outlying camps, while the insidious infection is slowly advancing its outposts from the periphery to the vital centers, is there absolutely nothing that we can do? It may be so, but have we yet exhausted all the available means? Are there no other resources than in excision of the initial lesion, which is but one of the multiple foci of infection, or this together with extirpation of a few inguinal glands, and in constitutional treatment with mercury and iodide of potassium? These, together with the now abandoned practice of syphilization, comprise about all the expedients thus far resorted to.

Excision of the initial lesion may have accomplished something. Certainly, when practicable, it is a perfectly rational, safe, and proper surgical procedure. It is removing an annoying symptom and a possible source of danger to others. Regarding the chancre as a depot of generation and supply of virus to the economy at large, its removal has another purpose, though, for considerations already given, with but small outlook of success. In a few instances excisions of inguinal glands together with the initial lesion have been reported, but thus far without noteworthy result. It is extremely doubtful whether an operation to include every indurated or infected gland would be practicable. The inguinal adenopathy is rarely or never recognized as a monadenitis, but as soon as any enlargement at all is felt it plainly consists of a lymphatic group, and how many glands in any given case this group would include, and how far it would require the operation to be extended, it is difficult to surmise. In the three specimens described by Fournier and already alluded to, the number of glands affected varied from eleven to sixteen. In one specimen there were seven inguinal and four iliac glands; in the second, six inguinal and nine iliac; and in the third, eleven inguinal and five iliac. Manifestly in these cases the extirpation of all the affected ganglia, both inguinal and iliac, many of the latter occurring high up above the crural arch, would have been out of the question. It is by all means desirable, though, that experiments in this direction be continued.

The idea of preventing an infectious disease by some kind of modified inoculation similar to what has proved so successful for variola has long been a ferment in the minds of those interested in the study of syphilis; but hitherto the cultivation has only produced unfertile suggestions. It is over forty years since Auzias-Turenne first proclaimed his fancied discovery, but the doctrine of syphilization remains only a chimera. A singular substitute for it was proposed some years ago by Diday. Inspired by the success of Pasteur in his preventive inoculations for charbon, it occurred to Diday that, by inoculating a patient recently infected with syphilis with an attenuated syphilitic virus, the course of the disease might be prevented. He conceived the idea that such virus might exist in the blood of a woman who had acquired the disease in carrying a syphilitic fœtus, and in whom the infection is apparently a modified one. The ingenious notion has never, to my knowledge, been put in practice, and it has met with but little favor. But the field of investigation it suggests is an attractive one, and, though the idea has thus far proved sterile, the future is always pregnant with possibilities.

As to the value of medicinal antisyphilitic treatment during the primary stage there is a diversity of opinion among syphilographers. While it is pretty generally conceded that the employment of mercury in this stage tends to retard the appearance of constitutional symptoms, the apprehension has been expressed by some that, in repressing the outward manifestations of infection, we are risking a more serious implication of internal organs. Thus, Julien concluded from certain statistics that late lesions of the nervous system were invariably associated with mercurial treatment in the initial stage, and that a similar connection existed in the case of syphilitic affections of the testicle. He examined one hundred and six cases with tertiary lesions, and of these forty-seven had been treated during the primary stage, and fifty-nine had not. It is stated that while in its normal course the so-called tertiary symptoms occur, as a rule, within the first four years, and after that period are comparatively rare, in those cases that had been treated in the primary stage the gravest symptoms occurred from the fourth to the fifth years. From this he would conclude that the employment of mercury at the start tends to delay the symptoms, and possibly may adjourn them indefinitely, which would be sufficient reason for early treatment but for the fact that when the symptoms do occur they are more severe. Diday has published statistics of similar purport. Of seventy-four cases of syphilitic chancre, forty-nine were treated without mercury. In these, secondary symptoms appeared on an average in 43·23 days. In twenty-five treated with mercury, the average duration before secondary symptoms was 49·08 days. In the forty-nine cases not treated, the syphilis was slight in seventeen cases, moderate in twenty-seven, severe in five. In the twenty-five treated, the syphilis was slight in six cases, moderate in fourteen, and severe in five. If it is admitted that these statistics prove anything, they prove that the mercury renders the subsequent syphilis severe as surely as that it delays the period of secondary manifestations. But there is an inconsistency in the idea that, for the month or so of primary syphilis, the same remedy is to be shunned, because of dangerous after-effects, whose continued employment during the years of the constitutional disease is accepted without demur.

Usually the advocates of early constitutional treatment have been those who believed in the symptomatic character of the initial lesion. Some who have opposed it have done so for no better reason than that it would postpone a confirmation of the diagnosis. Those who believe in a primary local infection have deprecated constitutional treatment for the local disease on the ground of its indirectness. It was subjecting the system to a toxic remedy before there was any systemic trouble; it was offering the antidote before the poisoning had taken place. But in how many instances do we administer mercury internally in syphilis for strictly localized lesions where the general system shows no sign of the disease whatever, and with unquestionable effect! There is hardly any one but admits that when the chancre is formidable in size, or slow in yielding to local measures, a mercurial course will hasten its involution. It must be granted, though, that it is taking a very roundabout road to reach the result. In localized affections generally, which are not symptomatic of systemic disorder, our main reliance is always placed upon the topical treatment, though an adjuvant effect may be derived from internal medication. In primary syphilis the disease is essentially a local one. While it is conceded that a certain degree of infection may exist in the blood, it is extremely doubtful if by internal medication it is possible to reach it. We know that mercury cures the symptoms; that it can not be relied on to prevent them is an every-day experience. It is possible that mercury is the direct antidote to the syphilitic virus. Granting the hypothesis of the parasitic nature of the virus, it is not unreasonable to infer that the efficacy of mercury in syphilis is attributable to its germicidal action. Whether, finally, this will be shown to be its only virtue in this disease is doubtful, and it will remain to be explained why this virtue is not displayed in a similar manner in other infectious diseases of a zymotic nature, such as lepra and tuberculosis. But, supposing that mercury does act as a germicide in syphilis, it is very questionable whether it could have any effect upon germs circulating in the blood. Much more probable is it that the effect would be exerted where both the germs and the mercurial would be most apt to accumulate, as at such places of elimination as the skin, or where deposited in the tissues. That mercury does exert a most decided influence upon the local manifestations of syphilis, when topically employed, we have undoubted evidence; then why should not this potent influence be brought to bear directly upon those local lesions which are also dangerous foci of infection in the primary period of the disease? And this brings me to the concluding and main object of my task, which is to advocate a more direct employment of mercury in the region where the chief source of danger has its seat.

It is only recently that the so-called "regional treatment" of primary syphilis has received much attention, nor have any remarkable results been yet reported. My own experience has been mainly confined to certain experimental attempts as to the feasibility of the method. It is, therefore, almost purely on theoretical grounds that this treatment is commended. The scheme consists in the local use of antisyphilitics by a method designed to bring the remedy or germicide in direct communication with the whole of the affected region in primary syphilis, including more particularly the initial lesion and the diseased glands. As commonly employed, the regional treatment has consisted simply in the use of mercurial hypodermics beneath the initial lesion (except this lesion be excised) and into the mass of the indurated lymphatic glands. But the plan may be easily extended. The field of operation may include all of that district whose lymphatic vessels tend in their course toward the ganglia which are the seat of disease. When the initial lesion is situated upon the genitals, the area most available would consist of the external genitals, the perinæum, the upper, inner, and anterior aspects of the thighs, together with the inguinal region and lower part of the abdomen. By multiple small subcutaneous injections and by inunctions within this area the remedy may be introduced little by little into the lymphatics with the hope of its being conveyed in sufficient amount to the diseased glands to destroy the infectious germs, or to retard their multiplication.

The only agent thus far employed for this purpose is mercury. Notwithstanding its irritant properties are a great hindrance to its use, no substitute for it has yet been found. The question that concerns us at present is how to introduce this irritating substance into the affected region with the least amount of offense to the normal tissues, but in sufficient quantity to exert its antidòtal or destructive influence upon the germs of the disease. Where hypodermics are used it is not necessary that the drug be injected in large quantity in any one spot, nor in a concentrated form. A twentieth of a grain or less of the bichloride introduced in separate injections of not over a hundredth of a grain each would afford a more reasonable hope of effectively reaching the seat of the disease than a much larger dose given by the mouth. I have used a solution of one part in four hundred or five hundred parts of mucilage and water, with a small quantity of common salt added. Of this, four or five injections are made of four or five minims each, distributed over different parts of the cutaneous area above described. The discomfort caused by the injections is insignificant, especially if caution is taken to prevent any escape of the fluid into the corium. Similar injections may be made beneath the primary induration, when it is not excised, and into the substance of the indurated glands. The number and frequency of these injections will depend on circumstances and on individual judgment. Into the skin of the abdomen and thighs they may be repeated daily or every second or third day. Together with the injections, but more especially in situations where the former are less admissible, as in the perinæum and over the penis and scrotum, inunctions also may be employed, and for this purpose a mercurial soap * will be found preferable to the mercurial ointment.

Many modifications of the plan here briefly outlined will doubtless suggest themselves in the future should this method of treatment receive the consideration which I believe it merits. Brilliant results we can not expect at once, but there is a certain satisfaction, nevertheless, in following a course that appears to be dictated by reason. It may be said that regional treatment is also constitutional treatment, as in a degree it doubtless is, but it is something more, and surely it is something better than doing nothing at all. Better is it to act on any chance, however slender, than be bound helpless to a dogma that is open to question and that would leave the victim of an insidious infection without succor and without hope during what may be the most momentous period of his disease.

BOVINE TUBERCULOSIS.†

By E. F. BRUSH, M.D.,

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After passing through the various controversies regarding gray tubercle, yellow tubercle, giant cells, scrofulosis, etc., at the present time we find the question of tuberculosis narrowed down to bacillary infection, and we are confronted with the inquiry, "Is bacillary tuberculosis conveyed to the human race from animals affected with this disease?"

All civilized races on the face of the globe have surrounded themselves with domestic animals. We have the horse, the pig, the sheep, the goat, the dog, the cow, and others. Of these we find that the horse is entirely exempt from tuberculosis. The sheep, the goat, and the dog are not found in nature affected with this disease, and they likewise resist artificial infection well; under certain conditions the pig takes on tuberculosis; it is, in fact, from this animal that we get our word scrofulosis. But, as we find them at the present time, they are not tubercular, because in this animal in-and-in breeding, which favors the development of tuberculosis in all creatures prone to this affection,

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* A very excellent soap for this purpose is the "sapo unguinosus" (seu "leniens") of Dieterich, described in the "Helfenburger Annalen," 1886, and also in the "Monatshft. f. prakt. Dermatol.," 1887, No. 23, p. 1068.

† Read before the Medical Society of the State of New York, February 7, 1888.

is not profitable to the breeder, as swine animals of close consanguinity fail to have young as a rule, and, if they do, the offspring dies soon after birth. Thus breeders are careful to put sows to boars not at all related, and we find the pig of the present day remarkably exempt from scrofulosis. The only reliable statistics to which I have access are some compiled in Bavaria in 1879. According to these, of 66,403 animals slaughtered for food, only two swine were found to be tubercular. When, however, we come to the bovine race, we find among these domesticated animals always a certain percentage of them affected with tuberculosis in its various forms. In fact, this race and the human are pre-eminently tubercular. In all the experiments of the present day, whether inoculation or cultivation, matter from either the human or the bovine race is used; and the question *pro* and *con* relating to the contagiousness of this disease lies between these two races. Of all the domesticated animals known, none is so intimately or closely related to the human race as the cow. We are veritable parasites on this animal. We milk her as long as she will give milk, and we drink it; then we kill her, eat her flesh, blood, and most of the viscera; we skin her, and clothe ourselves with her skin; we comb our hair with her horns, and fertilize our fields with her dung, while her calf furnishes us with vaccine virus for the prevention of small-pox. Strange it would be, indeed, if, under all these circumstances, we did not acquire from her some malady; she has tuberculosis, and we have tuberculosis; certain it is she does not acquire it from us. Artificial inoculation of tubercular matter from the cow in very many cases tubercularizes other animals, and, by the success of many of these experiments, scientific men have, many of them, been excited into becoming alarmists, and have appeared before the world in print with sweeping and startling assertions, but have failed to attract the attention they deemed their alarms entitled to.

The question of the contagiousness of the disease under consideration is an old one. Morton, writing two hundred years ago on consumption, says: "This disease is also propagated by infection, for this distemper, as I have observed it by frequent experience, like a contagious fever, doth infect those that lie with a sick person with a certain taint." Although this statement has been reiterated, and many of us have become convinced from our own experience, few believe that it is contagious among the human race. At a recent meeting in England, when the question was under discussion, Dr. Henry Bennett exclaimed: "Such a theory is dangerous, because, if it were true, the disease would be worse than the plague, and each tubercular patient would have to be treated as were the lepers of old." This is a queer statement, and evinces in a certain degree human perversity. I do not know what there is about this disease which fails to alarm the human race; it is contagious, insidious, deceitful, and destructive. Men afflicted unto death are seldom or never convinced that they are dying. As illustrating this strange human fallacy, we notice that at one time in Germany the name for tuberculosis in cattle was *Franzosenkrankheit*, the then popular name for syphilis, and hence for a long time the flesh of animals thus diseased was not eaten in that country; but, when they found that the disease was simply tuberculosis—an affection that kills a far larger number than the other disease—they fell to eating the meat again, just as we do.

Virchow says: "Man is far more susceptible to the diseases of animals than the latter are to similar diseases from man." Now, if Virchow is right, and he generally is, the question arises, Why are not more of the human race tubercular, as we find a certain percentage of all cows that furnish milk and meat to the human race are tubercular? Fleming reckons that 5 per cent. of all the bovines in England are infected. We have no complete statistics on this matter.

I have been told by inspectors of the Bureau of Animal Industry that a much larger percentage of our cows are affected. Indeed, among the thoroughbred Jerseys in the Northern States 20 per cent. are affected, as I have been told by Professor R. A. McLean, the chief of this district from the bureau. Now, with this large percentage of tubercular cows, and assuming that it is a fact that tuberculosis is communicated from the bovine to the human race, and considering our close relationship to the animal, why are not more of the human race killed by this disease?

The total number of cows in the United States for the year 1887 was 14,522,083—that is, one cow to every four and three tenths (4·3) persons. There exists, according to Lynt, a true parallel between bovine and human phthisis; the curves of double mortality are the same for different districts in the Duchy of Baden. Now this must mean that a larger proportion of the bovine race dies from phthisis than of the human race, because of the difference in the length of life between the races. We have no statistics of this kind in the United States, but Professor R. A. McLean, the authority before referred to, tells me that where cows are affected by tuberculosis in great numbers, the death-rate from phthisis is correspondingly large in the human race in the same districts; this is his observation from his large experience among diseased cattle.

Now let us see what the conditions of the two races are, how they differ, and how this difference modifies the disease under consideration. Without going into detail in comparing the two races, you will find, after due comparison, the most marked difference to be that of the normal temperature of the two races, and this difference you will at once concede is of more effect in relation to the disease than any of the other conditions. Many years ago I made an attempt to discover the true normal temperature of the cow, by thermometric observations of large herds in the field, and became completely puzzled at the lack of uniformity and the very high average. I then searched my books for some authority on the subject, and found a lamentable ignoring of the whole question in many works relating to bovine pathology. The only allusion I could find was in Steele's work, which, while excellent in some other respects, simply quotes bovine temperature from Armatage, and this quotation was in turn a quotation from an English book out of print, the name of whose author was not given. These quoted temperatures (100·9° F. to 101·9° F.) are much lower than the results of my observations, and the differences I observed in the range were far greater. I have found cows in apparently perfect health with a temperature of 103·5° F., and ranging from that down to 101·2° F. From my own observations among cows and the experience as given in books, I find that all the animals endowed with hairy and woolly coats, but without well-developed sudorific glands—that is, that do not sweat readily—do not maintain a uniformity of temperature. The difference between a quiescent condition and one of activity is several degrees without affecting the health. But all these animals have a higher range of temperature than the human species. Thus we find in the published tables the following figures:

Cows and oxen during confinement, 100·8° F.; during work and liberty, 101·8°; calves and stirks during confinement, 100·9°; during work and liberty, 101·8°; sheep during confinement, 102·5°; at liberty, 104·5°; lambs at liberty, 104·9°; pigs in confinement, 101·6°; at liberty, 103·2°; dogs in confinement, 99·3°; at liberty, 101·9; and horses in confinement, 99·2°; at work and liberty, 100·3°; rabbits, 103°; guinea-pigs, 102°; the common fowl, 106·7°.

Now, if you compare this table with all the recent inoculation experiments on bovine tuberculosis, you will find that the success of such experiments is in direct ratio with the temperatures—that is, commencing with the lower temperature, that of the dog, we find the resistance lessening as we go up the scale till we come to the common fowl, with the highest temperature, where there is no resistance whatever. Feeding with tubercular matter is always positive with this bird.

We can now see why the human race is not more extensively affected with tuberculosis, which, in my candid opinion, is all derived from the bovine race. A germ cultivated in the cow is a tropical growth, because her average temperature is between 101° and 103° F. The human race, by this mode of illustration, represents the temperate zone. Coffee will not grow in Connecticut unless you put it in a hot-house. Ringer, in his valuable little monograph on the temperature of the body as a means of diagnosis and prognosis in phthisis, states that in acute cases the temperature of the human body rises daily to a high point—103° to 105°. Further, a patient in previous good health is seized with pretty copious and repeated hæmoptysis; there are no physical signs, and beyond a cough and an elevated temperature of 102° or 103° F. there is no evidence of phthisis. These symptoms are, however, sufficient to declare the nature of the case. Thus you will see that the temperature as cited here by Ringer is about the normal temperature of the bovine race. Ringer further says: "Thus, in all cases observed in which the deposition of tubercle was going on there was a continual elevation of the temperature, while in those cases in which the deposition had ceased the temperature was normal." To quote further from Ringer, whose testimony is valuable on this point: "Thus we meet with cases of phthisis accompanied with elevation of temperature during several weeks before we get physical signs indicative of the deposition of tubercle." Now, although Ringer does not draw such a conclusion from this fact, the interpretation is plain to me that from some cause or other the temperature was increased to the right degree to start the growth of the *Bacillus tuberculosis*, which, when well started, like all other ferments, had the power of keeping up the temperature by its own activity. That is, the temperature has been increased to the proper degree to permit of the growth of the bacillus, and the deposition of tubercle is simply the result of the multiplicity of bacilli creating for themselves places of congregation. At least, I take it that this is the true relation of the germ to the tubercle. The germ does not kill directly, but an aggregation of the bacilli surrounded by the new growth is the tubercle, and when the tubercle is formed the germ has finished its activity; and, if this new formation becomes organized or cretified, death does not result, but if the tubercle, that has been formed simply as a resting-place for the bacillus, breaks down, death results from sepsis.

These facts relating to temperature also illustrate localized deposits of tubercle from traumatism. Thus a human body in which the bacilli are already present, but not growing for lack of temperature, finds its proper conditions where the temperature is raised by reason of the injury, as traumatisms always produce local inflammatory action. If this theory is accepted, the argument regarding the scrofulous origin of joint diseases becomes superfluous; both parties, in fact, have been right. In further proof that a high temperature is necessary for the growth of the *Bacillus tuberculosis*, the late Dr. Flint, in his valuable work on practice, says: "I do not hesitate to express the belief that in a certain proportion of cases alcohol exerts a curative influence in pulmonary phthisis." Wunderlich, in his valuable book on "Medical Thermometry," writes: "In febrile conditions the effect of alcohol is to lower the temperature." He also says: "Habitual drinkers have, as a rule, under parallel circumstances a lower temperature than other persons."

Not only does temperature play an active part in the creation of tuberculosis as a disease, but we find that in cultivations outside of the body it requires a nicer adjustment of temperature than any of the other germs.

In regard to the rôle played by temperature in the disease under consideration we have a very interesting experiment of Toussaint's. He extracted some juice from the lung of a tubercular cow; some of this virus he injected into a pig and two rabbits; then he heated in a water-bath part of the same virus to a 130° and 137° F. for ten minutes, and injected the virus into four hogs and four rabbits. He says general infection occurred very rapidly in all these animals. Curiously to state, the rabbits that had been inoculated with the heated liquid died before the others.

The only cited experiment that I can find where tuberculosis was conveyed directly from the bovine to the human race I clipped from the New York "Medical Record" some years ago: "Two Greek physicians inoculated a patient who was dying of gangrene of the leg with tubercular matter from a cow. They state that the patient's lungs were healthy prior to the inoculation, and at the autopsy there were well-marked tubercular deposits in the lungs." If this is an authenticated case, which of course I can not affirm, there was undoubtedly the proper temperature for the growth of the germs, and hence the success of the experiment.

My occupation brings me into close contact with dairy cattle, and I have therefore been compelled to devote my attention to the subject of the diseases afflicting dairy stock. That there is a large number of dairy cows afflicted with tuberculosis I can affirm; that there has never been an attempt to exterminate this disease is a fact of which I am also cognizant. Last year the Federal Government appropriated half a million dollars to stamp out zymotic pleuropneumonia. This disease does not affect the human race, as no other animal except the bovine has ever been known to suffer from it. It affects the pockets of the cattle-dealers grievously; but the health of the general public is not threatened by it, while bovine tuberculosis, which the Government inspector finds coincident with a high death-rate in human phthisis, is left uncontrolled. Cattle-breeders everywhere have unrestrictedly followed the homicidal practice of in-and-in breeding of dairy stock. This method of breeding we all know favors the development of the disease, and the development of this disease in the bovine race simply means more phthisis in the human race. One simple fact that strengthens my belief that human bacillary tuberculosis is all derived from the bovine species is, that where this animal does not exist, pulmonary consumption is unknown. The Kirghis on the steppes of Russia, who have no cows, have domesticated the horse, using its milk, meat, and skin, and a case of pulmonary tuberculosis has never been known to exist among the tribe. The Esquimau has no cows, neither has he pulmonary phthisis, and I think it can be laid down as a fact that where the dairy cow is unknown pulmonary consumption does not prevail.

Among the numerous statistics giving the occupation of those persons who die of bacillary phthisis, I do not find the occupation of a farmer included; my own observations in farming districts convince me that large numbers of these people die of lung tuberculosis. That these people are in greater danger of infection from milk from tubercular cows is evident from the fact that they very often drink the milk "warm from the cow," while the city consumer almost always gets his milk after it has been chilled, and all the cultivation experiments go to prove that this germ will not grow at a temperature of less than 87° F. The reason why these farmers' deaths are not included in statistics is due to their remoteness from the great centers where the statistics are collected.

The cow has redeemed us from one dreadful scourge, small-pox. I am, however, inclined to think a greater scourge is continued to us by the same animal. It is the deceitfulness and insidiousness of this disease that lure us into a quiet state. Bacillary infection is not rapidly fatal as a rule; the infection received into the system of a human being lies in wait for a proper condition of its host before it can assert its sway, and, if the opportunity never occurs in the individual originally infected, the infection is continued to the offspring, and the wasting bacillus finds its opportunity some time. Men never know when they receive the infection that results in a fatal attack of pulmonary phthisis.

We long ago acknowledged our inability to check this scourge when it has once got its insidious grip on a human creature. Certain cases do end in recovery, but under circumstances that thus far we have been unable to comprehend; we have no known methods of successful treatment. Let us then, as medical men, turn our attention to prophylactics.

There is no good reason why we can not be instrumental in passing laws to regulate the breeding of dairy stock. The disease is well marked, therefore there would be little difficulty in selecting animals afflicted and excluding them from the dairy and butchers' shops, and in indicating to our legislators the necessity of passing laws to prevent the breeding together of tubercular animals, or the in-and-in breeding of any of the bovine species. Let us treat this disease, especially among the cows, as leprosy was treated of old, and then we shall be saved from the painful necessity of treating the human race in like manner, for I am convinced that, if we stamp out tuberculosis in the bovine race, a few generations will eliminate it from the human family.

A CASE OF HOUR-GLASS CONTRACTION OF THE UTERUS.

By CHARLES W. PHILLIPS, M. D.,
SCIPIO, IND.

Mrs. H., aged thirty-seven, mother of three children, miscarried twice, and was under treatment for chronic endometritis from the time of her last miscarriage, which occurred in 1881, until her last conception.

I saw her, for the first time, in labor at 2 P. M., November 25, 1887. She had been in labor since 6 A. M. that day. When I saw her the pains were efficient, and labor was progressing satisfactorily though slowly. At 3.30 the membranes ruptured and the child was born at 5 P. M. After giving the child over to the nurse, I replaced my hand on the lax abdominal wall to follow down the contracting uterus, and then felt what seemed to be a fissure dividing it into two segments, the upper one being much the smaller of the two. Both segments of the uterus seemed to be very tense, and there were not at any time the alternate contraction and relaxation which belong to this stage of normal labor.

Immediately after the birth of the child my attention was also directed to the character of the pain. It continued incessantly, corresponding in this respect to the tense condition of the uterus. The lady complained a great deal, pleading earnestly for relief. She said the pain was "of a grinding and sickening character, and not like the bearing-down pains she had experienced at her previous births." In fifteen or twenty minutes, as there was some slight hæmorrhage, I administered a small dose of ergot (Squibb's fluid extract, ʒss.), and the hæmorrhage soon ceased. This, probably, I should not have done. However, I do not think the ergot in so small a dose could have influenced the case much, for either better or worse.

I then made an examination, and found the placenta high up in the vaginal canal—so high that I could only touch it. In twenty minutes another examination still showed it to occupy the same position. Not having an anæsthetic with me, I sent for the "A. C. E." mixture, but the druggist was not in, and i was nearly two hours before I could get it. (There is but on drug-store at this place.) During this time the lady suffered severely, the pain never abating the least, and she had become almost exhausted. I gave the anæsthetic, introduced my hand into the cavity of the uterus, and found the placenta detached, but, when I made gentle attempts to scoop it out, it refused to yield. A closer examination proved that a portion of the membranes was grasped by a constriction near the fundus uteri. This constricting ring was so firm that it was difficult for me to insinuate my index finger through it. I finally introduced three fingers past it, scooped out the retained membranes, and removed the placenta.

From the constriction to the fundus measured to the second joint of my index finger, a little less than two inches.

The interesting points to me in this case are these:

1. The constriction was near the fundus and not at the internal os. (Yet I must admit that hour-glass contraction near the fundus is acknowledged by the best authorities—Playfair for one.)

2. Both segments of the uterus seemed to be in a state of violent contraction. Duncan says: "Hour-glass contraction can not exist unless the parts above the contraction are in a state of inertia." I can not be positive that the upper segment was contracting, as it was very small. The lady was emaciated, and her abdominal wall was thin and lax, thus affording an excellent opportunity for external examination. But, so far as I was able to discern, the upper part seemed as tense as the lower.

3. There was no traction made on the cord at any time, so that can not be assigned as a cause.

4. The persistent pain was not caused by the ergot. It existed before the ergot was given.

5. Though she had been troubled with chronic endometritis, the irregular contraction was not due to adhesion of the placenta. It was detached, and a portion of the membranes only was grasped by the constriction, thus causing its retention. If I had made strong traction on the placenta, this part of the membranes would have been torn off and left *in utero*.

It is strange to me why a portion of the membranes only should be caught and not the placenta. Yet, the fact that the placenta probably occupied a lateral position makes it altogether possible that the membranes at its upper margin could be caught in this way.

6. The removal of the placenta was not followed with any hæmorrhage worthy of note. I expected a deluge of blood on removing it, but in this I was happily disappointed.

My description of this case is brief and deficient in detail, in order to be concise, but I trust the reader will get enough from what I have given to give him some idea of its more important points.

From what I had gleaned from the literature concerning the causes of this form of uterine contraction, I was prompted to entertain the opinion that it should not occur in the hands of the prudent and careful practitioner, and had learned to regard it almost with indifference. But that opinion has been somewhat modified by this, the only case I ever saw.

The Death of Mr. Thomas B. Curling is announced in the "Lancet" as having occurred at Cannes on the 4th inst. The deceased was in his seventy-seventh year.

LEPROSY IN THE UNITED STATES, AND ITS RELATION TO THE STATE.*

By CHARLES W. ALLEN, M. D.,

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Those not wholly familiar with the history of lepra in our own country, and especially those who have never had their attention called in a practical way to the subject by personal experience with the disease, are apt to regard it as one with which we have little or no concern, or at least of such rare occurrence here that it can be practically ignored.

It might indeed be asked, with seeming propriety, by the majority of general practitioners in most parts of our country, "Why should leprosy be a subject of concern to us aside from the natural scientific interest we all have in a disease which has been the scourge of many lands, and at all ages of the world's history most dreaded as a foul and surely fatal affection?" "Why should we stop to discuss a disease which appears of so little practical importance to us?"

I will ask you to take with me a hasty retrospect of the history of leprosy in the United States, to see just how we are situated in regard to it here, and whether the facts justify us in so practically ignoring it as a source of danger.

Presumably there was a time when no leprosy existed here, but just when the first cases were observed I am unable to say. In Louisiana there were some lepra cases many years ago, but prior to 1866 it was supposed to have wholly disappeared. It existed at first among the French settlers who came from Canada and the West Indies, but not among natives.

In the annual report of the Louisiana State Board of Health for 1880, Professor Jones reports sixteen cases, and Dr. White, in an excellent article,† says it can be traced back for generations.

In 1869–'70 Professor Boeck, of Christiania, visited Wisconsin, Iowa, and Minnesota, and found eighteen lepers, all of whom had come from Norway. Nine had the disease before emigrating; the other nine showed their first symptoms here. Eight had a family history of the disease, and in them the first signs appeared after they had been here from two to ten years. One woman became leprous after being fourteen years in this country. There was a history of her having at one time cared for a leper.

In 1884 Dr. Grönvold published in the "Journal of Cutaneous and Venereal Diseases" an account of leprosy in Minnesota subsequent to the visit of Professor Boeck. Six subjects were at that time known to exist in the State, and ten were known to have died (one came to New York). These six had been in the country from twelve to twenty-seven years and had been affected from seven to eighteen years. One girl, aged twenty-two years, had come to this country at the age of thirteen, so had been here nine years before any signs of the disease appeared, and in the mean time had seen no case of leprosy. She denies all knowledge of the existence of leprosy in either of her parents' families.

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* Read before the Medical Society of the County of New York, February 27, 1888.

† "Amer. Jour. of the Med. Sciences," October, 1882.

In the December number of the same journal Dr. Stoddard relates the case of still another Norwegian leper whom he saw in Renville Co., Minnesota. His disease had appeared about the time he reached this country some four years before. The only case of leprosy the patient had ever seen occurred in the person of his own aunt.

Dr. Geddings reports in the "Medical Record" of August 16, 1884, a case of indigenous leprosy in a girl twenty years of age, whose ancestors were of English origin and had lived in South Carolina for several generations. Her disease began at the age of six. The author says he has during the past twenty-five years seen about twenty cases of indigenous leprosy in and about Charleston, and that for more than forty years cases have been observed along the South Carolina coast.

In 1863 Dr. Holmboe, of Bergen, in Norway, made a tour of Illinois, Iowa, Minnesota, and Wisconsin, in which States Norwegian immigrants principally settle, and found some leprosy prevalent among them.

In 1864 there were found to be twelve cases in Minnesota alone, two of which had developed here, the other patients having had the disease when they landed.

On the Pacific coast Chinese immigrants introduced the disease into California and Oregon, and twenty cases are said to have been observed in Sacramento. During the ten years prior to 1883 fifty-two victims were admitted into the small-pox hospital in San Francisco, besides which a number were sent back to China.

Dr. Orme has reported to Dr. McNutt, President of the California State Medical Society, that six Chinese lepers were found in Los Angeles from 1883 to 1887.

There is one blind leper reported in the almshouse at St. Croix, Wis., and in Iowa there have been eight cases during the past twenty years.

Professor Piffard reported four cases which were under his treatment at Charity Hospital, of this city, in 1883, in the "Journal of Cutaneous and Venereal Diseases" of the same year, and at that time he stated that since 1864, when he saw his first case in this city, upward of thirty cases had been observed by him.

In this journal of the same year Dr. Amidon reported the case of a Cuban, born of healthy parents but whose brother had died of leprosy, who was under his treatment in 1881.

Dr. Atkinson reported at the American Dermatological Society, in June, 1882, a case of leprosy occurring in a woman, aged forty, of German parentage, who resided in Baltimore, and had never been outside of the State of Maryland. She had lived in the same street with a leper named Brown for two years, and for a year he was her next-door neighbor. Brown's case was reported by Dr. Rohé in the "Maryland Medical Journal," July, 1878. This patient subsequently died in Charity Hospital in this city, and the case is one of those reported in 1883 by Dr. Piffard. Only three cases of leprosy had been observed in Baltimore for many years, and Dr. Atkinson very justly regards it as highly probable that she contracted the disease from her next-door leprous neighbor. An excellent article by Dr. White, of Boston, appeared in the "American Journal of the Medical Sciences" in October, 1882. Three persons with leprosy had been seen in Boston, two having escaped from the lazaretto of Tracadie and another from Louisiana, and still another from Tracadie had been seen in Providence. One case is reported by Dr. Abbott in the Massachusetts State Board of Health report for 1883. A former resident of Salem had contracted the disease while residing in Honolulu, and it had made its appearance several years before he came home. He died in March, 1883.

Dr. Costales published the following case in the "Journal of Cutaneous and Venereal Diseases," September, 1883:

> A resident of Brooklyn contracted leprosy in Venezuela fourteen years ago in the following manner (he came under the writer's observation in 1878): A lady in South America was taken sick with the disease, and an aunt of Dr. Costales's patient called frequently to see her. Before the death of the lady referred to the aunt contracted the same disease, which, so far as known, never previously existed in the family. The aunt used to carry Dr. Costales's patient, and was with him considerably

I shall refer to this case again in speaking of contagion.

Dr. Fox has seen a number of cases in this city, one of which, that of a Cuban, I remember seeing when he presented him at the New York Dermatological Society in April, 1886. He records the following case in "The Quarterly Bulletin," November, 1885:

> A gentleman born in the Sandwich Islands, but of New England parents who had gone there as missionaries, had there contracted the disease. For seven years he had noticed a dark patch on the left thigh and numbness of the fingers, etc. He was under Dr. Fox's treatment for some months in this city, and continued treatment with great benefit after going to live in a Western State.

Dr. Sherwell presented a case at the New York Dermatological Society in 1883.

Dr. Bulkley reported ("Medical Record," 1881, vol. i) two cases of leprosy occurring in natives of the United States who had never been five hundred miles from New York. The first was the case of a man, aged thirty-eight years, who lived in Hudson, N. Y. He died in the ninth year of the disease. The second case occurred in a man who had never been out of the country. This patient died in the eighth year of the disease. Dr. Bulkley had treated in all about nine cases here up to that time; four of them, however, are reported elsewhere.

An instance of a native of this country acquiring the disease by going among the lepers is that reported by Hyde.*

> An American, born in Oswego, N. Y., ran away from home at the age of sixteen and went as a sailor to Honolulu, remaining there fourteen or fifteen weeks, associating freely with natives, indulging in the usual pastimes of sailors. For a number of years thereafter he made frequent trips to the Sandwich Islands, remaining there at times as long as seven months. Some ten or twelve years after returning permanently to this country the disease appeared. It was the fifth case of leprosy reported in Chicago.

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* "American Practitioner," February, 1879.

Hyde mentions two cases from Nebraska in his handbook on "Diseases of the Skin."

Dr. Van Harlingen presented a case at the October meeting of the Philadelphia County Medical Society, and reported two other cases:

Case I, seen in 1883, was that of a native of Cuba who had been in this country but a few months.

Case II was that of a native of Pennsylvania, who was married at the age of seventeen to a native of Brazil, where she went to live with him. Her first symptoms occurred about three years ago. In December, 1886, the patient was sent to St. Joseph's Hospital, but, suspicion having been aroused as to the nature of the disease, she was dismissed, and later on found employment in a small hotel.

Case III was that of a daughter of the patient in Case II, twelve years and a half old. The disease had begun at about the same time as that of the mother.

Still further cases will be found in the transactions of the American Dermatological Society during the past ten years.

In the five years from 1878 to 1882, nineteen cases were reported from the four cities, New York, Boston, Chicago, and Baltimore.

There are undoubtedly other cases which have never been reported, the patient, knowing with what horror the public regards the disease, naturally shunning publicity, and the physician humanely guarding his secret.

Two hitherto unpublished instances of lepra in New York I am permitted to add to the number already given:

One is the case of F. A. Victor, a native of the island of Mauritius, where there are several thousand lepers. He entered the Colored Home of this city in 1878 at the age of twenty-one, in the second year of the disease, and died in April, 1887. His history and autopsy record have been kindly furnished me by Dr. Bickerton. He had frequent eruptions of bullæ upon the body and ulcerations of the fingers. Occasional improvement was noted under the use of chaulmoogra oil. Death was due to broncho-pneumonia and chronic diffuse nephritis.

During his stay at the Home, "Vic," as he was familiarly called, frequently went out for longer or shorter periods, twice being absent for four or five months. During one of these absences he applied to me for treatment at the University Dispensary.

Dr. Wiener has related to me the case of a gentleman born in Texas who had never been out of this country. The patient came to him for advice in 1885, having been treated for syphilis elsewhere. The lesions were unmistakably those of lepra, but the origin of the disease could not be accounted for. After remaining under treatment for a time here, the patient went to Paris.

In looking over the histories at Charity Hospital, I find that during the past ten years there have been treated at least eight cases. It may be interesting to trace the subsequent history of the four cases reported by Professor Piffard in 1883.

Case I.—This is the patient whom I present to you. James E., aged twenty-seven, a native of Bermuda, born of English parents, was admitted to the hospital about eight years ago. There was no family history of the disease, nor had the patient ever, to his knowledge, associated with a leper. He resided in the West Indies until the age of twelve, when he came to this country in apparently good health. After about two years he noticed brownish spots or patches over both hips, which were attended with some heat. These patches subsequently extended to the thighs, arms, and legs. One year after this he returned to the West Indies and remained two years. Tubercles now developed where the brown patches were, and also appeared on the forehead and face.

He was treated with chaulmoogra oil and nux vomica internally, and cardol was applied locally.

About three months ago I found that this patient was growing worse, having taken no medicine for some time. Chaulmoogra oil was begun again in twenty-drop doses three times a day; recently this dose was increased to thirty drops. He has shown some improvement. Early in February I excised several disfiguring tubercles from the face and nose, and treated others by linear quadrilateral scarification. A week ago I removed the outer two thirds of the left eyebrow, which had become so altered and thickened by leprous infiltration as to hang over the eye and interfere with the sight, besides causing disfigurement, which annoyed the patient. To the opposite side of the face and to the arm and thigh I have applied a solution of pyrogallol in collodion in strength of a drachm to the ounce. The surgical procedures were followed by prompt healing, and the results were satisfactory. The pyrogallol, so far as employed, has caused in a measure resorption of tubercles and patches of infiltration. Although the patient sees quite well, the eyes are extensively implicated, and Dr. Andrews, who has recently made an examination, reports leprous deposit in the iris with distortion and degeneration. This same condition he has found in the eyes of lepers in China. There are also injection and infiltration of the ocular conjunctiva around the cornea. The *Bacillus lepræ* was found in the excised tubercles.

Case II.—Peter Anderson, whose case was the second reported by Piffard, died in the hospital on November 16, 1883.

Case III.—Adolph Miller died during my term of service at the hospital in December, 1885, of acute lobar pneumonia and acute parenchymatous nephritis.

Case IV.—Owney Johnson was discharged in July, 1883, somewhat improved.

The following four cases I will mention briefly:

Hugh Lay, aged twenty-seven, a native of China, was admitted May 29, 1883. He had been well until fifteen months before, when small tubercles appeared upon the face. There was no family history. Treatment consisted of nux vomica in doses of from four to ten drops twice daily until September 12, 1883, when he was discharged not improved.

The following history is of interest as showing another instance of a native of this country acquiring the disease by going into a leprous region:

Abraham B., aged forty-five, a native of the United States and a bricklayer by trade, was admitted into Charity Hospital, July 5, 1878. Family history good. Twelve years ago he went to Cuba and lived in Santiago for three years, but does not know that he ever saw a case of leprosy there. For the past nine years he has been in New York. In February, 1878, first experienced a sensation of formication upon the forehead, and had chills, and did not feel quite himself for some time. In April a tubercular eruption appeared upon the face, and the eyebrows and lashes soon fell out. Sensation lost in tips of fingers, followed by similar condition in legs. One year later the skin was very much discolored, nose, ears, and lips infiltrated, arms and legs covered with fine scales. These symptoms were followed by ulceration of joints and laryngeal ulcerations, etc. (See report by Dr. Elsberg, N. Y. "Med. Record," Aug. 2, 1879.)

The patient died suddenly on April 19, 1879, and the autopsy showed infarction in the lower lobe of the lung, two inches in diameter, in yellow stage. Thrombi in pulmonary artery on both sides, collapse of lungs, etc. Chronic diffuse nephritis, stony hardness and enlargement of ulnar nerve, and other nerve changes.

William W., a native of Jamaica, was admitted November 3, 1884. There was no family history. There were pigmentary spots, anæsthesia, enlargement of ulnar nerve, ulceration, etc., and bullæ subsequently formed. He was treated with tincture of nux vomica in doses of five to ten minims three times a day until the following July, when he was discharged much improved. Treatment was here of decided benefit, and patient was cured of the severe lesions and symptoms he had on admission.

In 1880 there was a German in the hospital who had contracted the disease in Mexico. The patient, James E., whom I have presented, is the only patient now in the hospital. There is a further case of a German who contracted the disease in Mexico, and was in Charity Hospital in 1880.

Quite a number of deaths from leprosy have occurred in this city during the past seventeen to twenty years. I have before me a report from Dr. Nagle, of the Bureau of Vital Statistics, which he has kindly sent me. It shows that since 1871 eighteen deaths have been recorded for this city as due to "elephantiasis." That by this is meant elephantiasis Græcorum, in the majority of cases at least, is indicated by the fact that this term alone is used for all the cases of death which I have mentioned as deaths from lepra. Dr. Nagle says: "I am quite certain that there were other deaths of persons who had this disease, the medical attendant failing to state it." I know of at least one such instance.

Thus we see that in the aggregate lepra has existed to a considerable extent in this country during the past twenty years, and, without going into a careful calculation, I think we can safely put the number of cases at one hundred and fifty, without counting twice those cases reported by two different observers. Now the question is whether the disease is on the increase here, or whether is it dying out. Prior to 1866 there does not appear to have been any leprosy in Louisiana, none in Minnesota until the Scandinavian immigrants brought it some years before this date, and none in California before the Chinese introduced it there. About Charleston, S. C., it appears to have existed for many years. Whether cases were seen in New York, Boston, and Philadelphia before this same time I do not know, as I find no report of any.

If we should take the actual count of lepers in this city to-day, and compare the number with those here in 1883, we might find a smaller number, and might infer that the disease was decreasing. If we turned to Minnesota, we should probably find that, despite continued immigration, the number was now less than it was in 1869–'70, and should be led to agree with Daniellsen and Boeck that in this northern climate the disease tended to disappear.

That, however, I believe is not the proper way to arrive at the truth. The question requires more study. And, by the way, no country at the present day would seem to be better suited for a proper study of the disease than our own. Here the disease is of comparatively recent introduction, making possible exceptions for Louisiana and South Carolina.

Here we have a new country, free from the element of hereditary taint. All parts of the country are well supplied with competent medical men, whose observations may be safely trusted. The small foci of the disease are well known, and any new cases are not likely to escape observation. And we know pretty accurately when the first cases were observed. Of much greater import, it seems to me, is the fact that no fewer than five indigenous, sporadic, and unexplained cases of leprosy have of late years sprung up than that foreign lepers previously landed on our shores should have followed the natural course of the disease and died. Furthermore, nothing prevents enough immigrants, with the disease already in their systems, from landing and making good the number, or increasing it to any extent.

Besides being a favorable country for the study of the disease, the United States is geographically so situated that we are at all times likely to have lepers visit us and settle here.

To the northeast of us we find leprosy of long standing in New Brunswick, a lazaretto having been established at Sheldrake Island as early as 1844, and at Tracadie in 1849, which by 1875 contained nineteen lepers, and there were seventeen outside in the province. In May, 1885, the lazaretto contained twenty-one lepers, and only four were then known to be at large. The diminution, by two at least, is accounted for by those cases which had come to this country from Tracadie, reported by Dr. White, of Boston, in 1882.

To the south we find leprosy in Mexico, Central and South America, especially in Brazil, where, according to the last census, there are five thousand lepers in a population of ten million people, and Lutz* thinks, if the truth were known, the number would be ten thousand, or even more. Available data in regard to the disease in Brazil do not go further back than 1755. The disease is also found quite largely among our neighbors in the West India Islands.

Westward we find it in its most active and destructive form in the Sandwich Islands, and, at a still greater distance to be sure, but near through commercial intercourse, in China and Japan.

From the east we are continually threatened by immigration from Norway and other countries where it has not died out.

Thus on all sides we are accessible to the leper. According to recent reports, the disappearance of leprosy in Norway is rapidly being effected. The first reliable statistics were collected in 1884. They showed that in 1856 there were 2,867 cases in the country. This number has steadily decreased until, in 1884, there were but 1,500 or 1,600. Some of them, as we have seen, came to this country.

Now, it becomes a serious question whether we should receive these afflicted people, aside from the question of their becoming a burden to the State. Is there no fear of the increase of cases here keeping pace with the decrease in leprous districts abroad? If lepers are freely allowed to land and to settle where they please, to marry and rear families, to come and go at will, why, under hygienic and sanitary conditions somewhat different from those now enjoyed by us, can not much the same thing happen as has happened in other countries? If more freedom is allowed them here than at home, if better treatment can be here obtained, will the number of new-comers not continue to increase as it already surely has?

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* "Monatshefte für Dermat. u. Syph.," 1887, Nos. 10 and 11.

Furthermore, sailors, who, it would seem, from their habits of promiscuous intercourse with natives of foreign ports, are especially prone to become affected, are likely at all times to make a landing in our seaboard cities.

I think I shall be borne out in the statement that of late years we have received many more visits than formerly from well-to-do persons, natives of foreign countries, who come here in search of health. Each year our large cities are visited by travelers having leprosy, who come here hoping to find a cure, or at least a climate more favorable than the one in which the disease was contracted.

But, you may say, why should they not come and receive the benefits our climate offers? What is the danger? Those who settled in Iowa all died and did not spread the disease. I can only answer—wait. We are young yet. They have not been coming long, and as yet there is not much crowding. Formerly, if a native of New York or of Massachusetts contracted leprosy, he had to go to it. Now it is brought to him, and the result is already seen in several sporadic and " unaccountable " cases.

What we might be led to expect, should the conditions of life in any part of our vast country become such as we find them among the Hawaiians (and such as they probably are in the more densely settled portion of our cities), may be inferred from a history of the present scourge in their islands.

So far as records go (and I have the official reports of 1886 before me), the disease first became known about fifty years ago. Various theories have been advanced to account for the outbreak of the disease. Its introduction has been attributed to the Chinese, and it has always been called the *mai pake*, or Chinese sickness.

It seems probable to me that a few cases existed prior to the date of Chinese immigration, just as it has existed in some of the Southern States here, and that the promiscuous mingling of the people and careless modes of life at a time of increased commercial relations with the outer world, together with the possible influence of improper and careless vaccination, determined the outbreak.

Dr. Hagan * says that Dr. Baldwin, a missionary physician, was on the island when the first case occurred in a native in 1838.

A Chinese servant in the family had the same disease. "In from seven to ten years the disease not only showed itself in other members of the family, but in their friends, and spread in such a way that long before they knew the name of the disease they were sure it was a blood disease and clearly contagious."

Dr. Fitch,* a physician in charge of a leper hospital in Honolulu and also a leper settlement on the island of Molokai, says that a native named Ahia was a leper as early as 1840, and that Naara, the father of Queen Dowager Emma, became a leper in 1845.

Other writers state that the Chinese first brought the disease to the island, and that it appeared about 1848. However this may be, by the year 1879 there were two thousand lepers in the island, and in 1866 a law was passed compelling their segregation, and from this date to 1886 three thousand and seventy-six cases were consigned to the Kalawao leper settlement. Thus in fifty years, from an insignificant starting-point, we find this vast multitude of human beings civilly dead and worse than virtually so—objects of horror and dread, regarded as sources of contagion, whether justly so or not, without the hope of any great or lasting benefit from medical skill, with nothing to look forward to in this world but a loathsome death.

Although no further proof of the spread of the disease seems to me to be required than its history in the Hawaiian Islands, I will, however, add a contribution from the pen of Dr. Suzor, of Mauritius, taken from the "Progrès médical," No. 14, 1885.

> "In Guiana leprosy was unknown either among the natives or white settlers prior to the introduction of slavery. Among the negroes there were some afflicted with leprosy. Isolation was practiced and the disease was limited strictly to the blacks; but in 1831 more than four hundred were established in a settlement on the banks of a river near which some Indians lived. In 1842, eleven years later, a large proportion of these natives were affected, but it was only those belonging to the affiliating tribe to whom the disease had extended, and especially had it occurred in children of this mixed parentage. At the present time two in a thousand of the entire population are leprous, and the whites and mulattoes furnish their share."

The Philadelphia Board of Health, considering lepra a contagious disease, imposed a fine of $100 upon Dr. Van Harlingen for not reporting the cases already referred to, and, after an unsuccessful attempt to send the patients back to Brazil, placed them in strict confinement in the Municipal Hospital.

Now, the Philadelphia Board of Health is either in the right or it is seriously interfering with the rights of others. It is no light matter, where no crime has been committed and no law broken, to deprive one of that liberty which is so integral a part of our national right, the birthright of every born American, the boon of every new-comer to our shores.

The whole question of State interference turns upon the question of the contagiousness of the disease.

Are we possessed of sufficient data on which to base an opinion that the disease is transmitted from individual to individual?

Discussing the question of the contagiousness of lepra might be looked upon as superfluous did we not find the opposite opinions held by many eminent men and careful investigators. Dr. Zambaco, whose opportunities for observing lepra at Constantinople and elsewhere have been exceptional, maintains its non-contagious nature, and in the memorable discussion which took place before the Paris Academy of Medicine in 1885 Vidal almost alone supported the theory of contagion against Constantin Paul, Dujardin-Beaumetz, Hardy, Le Roy de Méricourt, and others. The general sentiment of the Academy was opposed to the contagiousness of the disease.

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* "Southern California Practitioner," March, 1886.

* "Pacific Med. and Surg. Journal," October, 1885.

Even the physicians having extended experience in the Hawaiian Islands are divided on the matter. The majority, however, favor contagion. "Dr. Fitch believes himself justified in saying that leprosy is hereditary, and can not be communicated by one person to another under any circumstances."

(*To be concluded.*)

INJURIES TO THE FŒTUS DURING PREGNANCY.[*]

By BARTON COOKE HIRST, M. D.,

DEMONSTRATOR OF OBSTETRICS IN THE UNIVERSITY OF PENNSYLVANIA; OBSTETRICIAN TO THE PHILADELPHIA AND TO THE MATERNITY HOSPITALS.

The position of the fœtus in utero is one that secures it the greatest possible immunity from external violence, surrounded as it is by liquid, protected by the soft and flexible uterine muscles, and further shielded by the fatty, muscular, and cutaneous tissues that form the abdominal walls; but, in spite of this evident attempt of nature to afford it every protection, the fœtus may experience injuries of the gravest nature, either in connection with serious injury to the mother, or occasionally with very slight evidences of violence to the maternal tissues. Thus, in cases of gunshot,[†] stab,[‡] or other perforating wounds of the abdomen in pregnant women, the fœtus has likewise been severely and fatally wounded. Also, in the performance of laparotomy,[#] by a mistaken diagnosis the trocar that was plunged into what was thought to be an ovarian cyst has penetrated the fœtus, and wounds have been inflicted by both sharp and dull instruments ignorantly used to bring on an abortion or in the hands of physicians who overlooked the condition of pregnancy. On the other hand, as instances of fatal injury to the fœtus without apparent injury, externally at least, to the mother, might be cited those interesting cases of Mascka[‖] and Gurlt,[△] in which the cranial bones of the fœtus were fractured by the mother falling from a height, or the still more remarkable case described by G. von Hoffmann[◊] of a woman in the fifth month of pregnancy who threw herself out of a fourth-story window and was killed by the fall, although she exhibited no signs of external injury; the uterus was uninjured, and the fœtus, externally, was apparently unharmed, but on opening its abdomen the liver was found to be almost disintegrated. The case, however, reported by Dr. Lumney[*] shows more clearly how a slight violence to the mother may be fatal to the fœtus. A pregnant woman, within ten days of term, attempting to enter a doorway, slipped and struck the left lower portion of her abdomen against the edge of the door. The movements of the child thereupon ceased, and eight days afterward a dead fœtus was born with a fracture of the left frontal and parietal bones of the skull.

These cases of fœtal injury not only are interesting from their rarity, but they may assume importance from a medico-legal point of view. Thus, Gorhan[†] records the death of a fœtus from violence done the mother at the hands of another woman in the course of a brutal quarrel between two sisters-in-law, during which the pregnant woman, being at the time in the sixth month of gestation, was thrown to the ground and stamped upon by her infuriated relative. Two months afterward a dead fœtus was born, corresponding in development to the sixth month of pregnancy, and exhibiting a transverse fracture of both parietal bones. Here the individual who did the violence to the pregnant woman was directly responsible for the fœtal death, and should have been held accountable for it.

To these cases, rather hastily collected from medical literature, I would add one that I have recently observed in the Philadelphia Hospital.

J. B., aged nineteen, primigravida, says that exactly at the beginning of the seventh month of pregnancy she was severely squeezed between a bale of goods and the wall in a warehouse where she was employed. She was much shocked at the time, and went home feeling very ill; from that time she was subject to constant nausea and vomiting, retaining scarcely any food, and becoming, in consequence, much reduced in flesh and strength. This condition of affairs lasted for a month until premature labor came on. With the expulsion of the fœtus the woman began to improve, and soon regained health and strength.

The fœtus was macerated, and corresponded in development to the seventh month of intra-uterine life. The post-mortem examination was unsatisfactory on account of the degenerative process that all the tissues had undergone, but over the region of the brain corresponding to the parietal eminences there were large clots of blood, whether of ante-mortem origin or simply the jelly-like masses resembling blood that one meets with in macerated children, it would have been difficult to say. Its appearance suggested the former explanation. The placenta showed no sign of premature detachment nor of ante-partum hæmorrhage.

Polymorphous Erythema.—The pathogeny of many erythemata is ill-understood. These areas of hyperæmia occur under a great variety of conditions, but their connection with rheumatism is not the least interesting. Rayer considered that polymorphous erythema was a form of rheumatic fever with cutaneous instead of arthritic manifestations. Haushalter regards multiform erythema as an eruptive fever, having, like the acute specifics, an eruptive period, a period of incubation, and visceral manifestations such as bronchitis, endocarditis, and nephritis. Search has been made, without success, by Haushalter for a micro-organism in these cases, but cultivations in agar-agar gave rise to white colonies, which, however, suspended in distilled water and injected into guinea-pigs, gave no result.—*Lancet.*

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[*] Read before the Philadelphia Obstetrical Society, March 1, 1888.

[†] Hays, "Ann. de gyn.," 1880, xiii, p. 153.

[‡] Finnell, "Tr. of the N. Y. Path. Soc.," iii, 249; Tarnier et Budin, "Traité de l'art des accouchements," ii, p. 345; Guelliot, "Gaz. des hôp.," 1886, p. 405.

[#] Goodell, "Lessons in Gynæcology," p. 352.

[‖] "Prager Vierteljahrschrift," 1857.

[△] "Monatsch. f. Geburt.," 1857, p. 343.

[◊] "Wien. med. Presse," xxvi, 1885, Nos. 18, 20, etc.

[*] N. Y. "Med. Rec.," 1886, p. 359.

[†] "Wien. med. Presse," xxvi, p. 370.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MARCH 24, 1888.

THE MARINE-HOSPITAL SERVICE AND THE PROPOSED NATIONAL BUREAU OF HEALTH.

In a monthly report to the Secretary of the Treasury, dated March 1st, Surgeon-General Hamilton, of the Marine-Hospital Service, gives an account of the proceedings at a hearing before the House Committee on Commerce, held on the 24th of February, with reference to a bill proposing the establishment of a national bureau of health. On that occasion Dr. Hamilton submitted a brief setting forth succinctly the additional expense that would be entailed upon the country by the establishment of such a bureau and the lack of any real necessity for the step. Dr. Hamilton was allowed to speak for a few minutes in support of the positions taken in the brief, and several gentlemen whose interest in sanitary matters is well known were heard in support of the bill. Among them were Dr. Walcott, of Massachusetts, Dr. McCormack, of Kentucky, and Dr. Billings (whose remarks, in accordance with his own request, have not been printed) and Dr. Sternberg, of the army.

So far as the main argument was concerned, the supporters of the bill seem to have depended chiefly on the prospect which it was assumed to hold out of a substantial return to the methods of the defunct National Board of Health, with the performance of continuous laboratory work in the investigation of infectious diseases, etc., and the regular reception and prompt publication of returns from local boards of health. As to the first of these items, Dr. Hamilton met the objection to the present arrangement with the statement that he had had a laboratory fitted up at New York, although he had not "blazoned it out to the world," and that Dr. Kinyoun was steadily at work in the investigations for which such laboratories were intended. As some of our readers may remember, in our issue for November 12, 1887, we published an article entitled "Observations on the Cholera Bacillus as a Means of Positive Diagnosis," by Dr. Armstrong and Dr. Kinyoun, embodying the results of certain studies in bacteriology made by themselves, in conjunction as to some portions of the work with Dr. Biggs, of the Carnegie Laboratory, and Dr. Prudden, of the Alumni Laboratory of the College of Physicians and Surgeons. In the same issue we published Dr. Biggs's article on "The Diagnostic Value of the Cholera Spirillum, as illustrated by the Investigation of a Case at the New York Quarantine Station." Reference to these articles will show that both of them were the outcome of important laboratory as well as clinical study undertaken at short notice, and that the work was performed quite as satisfactorily and creditably as it could reasonably have been expected to be done by any continuous investigator acting under the auspices of a national bureau of health.

As to the other function of the proposed bureau—that of collecting and promptly disseminating information of the prevalence of infectious diseases—Dr. Hamilton was correct, we think, in maintaining that no national legislation could compel local boards and officials to furnish a central bureau with the facts in question. Under our present laws, whatever information of the sort is given is furnished voluntarily in the interest of the public welfare; if, as Dr. Walcott intimated, Massachusetts can not get it from New York, it is not unreasonable to suppose that a national bureau would encounter the same difficulty. If the local authorities profess, however, that they are willing to report to such a bureau as is proposed in the bill, but unwilling to send returns to the Surgeon-General of the Marine-Hospital Service, to the ordinary understanding they confess themselves to be actuated by something else than devotion to the cause of public health, and they go far toward justifying a question asked at the hearing by a member of the committee as to whether the matter was "a doctors' fight."

It was complained that Dr. Hamilton's abstracts of consular reports were not received early enough to prove monitory, but were generally forestalled by dispatches in the daily newspapers. To this Dr. Hamilton replied that, as a matter of course, a weekly publication could not compete with the daily press, and he added that he had often stopped the printing in order to insert telegraphic dispatches received after going to press. He might have said also with perfect truthfulness that his abstracts had been published with a promptness quite unequaled by similar documents emanating from any board of health. Under one form or another, the old National Board of Health has been sought to be revived on several occasions, and each time Dr. Hamilton has had to oppose the attempts almost single-handed; to the superficial observer he may have appeared to be only the champion of his own corps, but it is our conviction that he has simply acted in the interest of the public. So long as the affairs of his office are conducted with the ability and fidelity that he has displayed ever since his accession, it will take other arguments than any we have ever known to be advanced to lead us to see the desirability of such a bureau as the bill in question provides for.

AMMONIUM SALTS AND CAMPHOR AS STIMULANTS.

Within the past few years experimental investigation has placed therapeutics on something approaching a scientific basis, but there are still many problems to be solved in that branch of our art. The phenomena observed after the administration of drugs to the lower animals in a state of health or in induced pathological conditions do not always coincide with what is seen at the bedside. So often is this the case that there is no lack of intelligent physicians who either have no faith in the remedial virtue of drugs or prefer to administer them on the plan of empiricism rather than on one deduced from laboratory work. But when an instance occurs in which empiricism, or rather clinical observation, is supported by experiments carefully carried out in the laboratory, the hope gains ground that the properties of certain drugs will become established on a firm basis and that their use will cease to be subject to individual caprice or fashion. Such considerations lend interest to an article by Professor Binz, published in a recent issue of the "Centralblatt für klinische Medicin," founded upon experimental researches with camphor and the salts of ammonium by Dr. v. d. Helm, under the guidance of the author and Dr. Geppert.

It was found that the introduction of three quarters of a grain of ammonium chloride into a vein in a healthy rabbit increased the respiratory capacity by one fifth in the course of a few minutes without the onset of spasms. After the subcutaneous injection of a grain and a half of the same salt, the blood-pressure increased each time a quarter above the normal, and this effect was independent of the irritation of the nerves of the skin by the salt, for it took place just the same when the chloride was injected painlessly into a vein. After the breathing capacity and the blood-pressure had been considerably reduced with large doses of chloral hydrate, a subcutaneous injection of ammonium chloride always had the effect of increasing them; but this result was produced only by repeating the injection (of a grain and a half), and, moreover, it was transitory, and a persistence in the use of the drug brought on convulsions.

Liquor ammonii acetatis was formerly held in high esteem as a diaphoretic, but lately it has lost much of its repute, having been largely superseded by pilocarpine. Marmé having found that this preparation much resembled pilocarpine in its action, producing decided perspiration of the paws when given to cats, v. d. Helm repeated Marmé's experiments with exactly the same results. Thus a time-honored remedy is rescued from threatening oblivion by experimental researches.

Camphor has long been considered a trustworthy stimulant, and it has been well known that in large doses it was capable of producing convulsions by irritating the medulla oblongata. But hitherto little has been done with the drug experimentally, so that v. d. Helm's experiments pertained to an almost uncultivated field. They corroborate clinical observation. A rabbit's breathing capacity was very much diminished by the injection of a third of a grain of morphine directly into the jugular vein, and it was then given two grains and two thirds of camphor subcutaneously every ten or twenty minutes. In less than five minutes the breathing capacity had almost reached the height that existed before the administration of the morphine. After the sixth dose—seven doses were given in all—the animal became restless and showed spasmodic movements, but these soon passed off, and in five hours after the beginning of the experiment the rabbit was running about as usual. On the following morning, however, it was found dead in its cell, and, judging from its condition, death must have been preceded by violent convulsions. The morphine had evidently staved off the convulsions, but when its effect had passed off the irritative action of the camphor set in, with the result stated. Binz had previously shown that camphor was a cardiac stimulant with the lower animals, so that experiment fully sustains clinical observation in this case. The value of the drug in tiding the patient over the crises in acute fevers, when death threatens by respiratory paralysis, is now placed on a firm footing and can not be overestimated.

MINOR PARAGRAPHS.

THE CARTWRIGHT LECTURES AND THE BELLEVUE HOSPITAL ALUMNI ADDRESS.

We have already notified our readers that the Cartwright lectures were to be given this year on the evenings of March 29th and April 5th and 12th, and that the first annual address before the Society of the Alumni of Bellevue Hospital would be delivered on the evening of April 4th. As the dates mentioned are drawing nigh, we would again remind our readers that a general invitation to the profession to listen to the discourses in question has been given. Two of our Baltimore colleagues are to be the speakers, and what each finds to say—Dr. Welch on the general pathology of fever, and Dr. Councilman on predisposition in tuberculosis—will undoubtedly be well worth hearing.

THE NEWARK CHARITABLE EYE AND EAR INFIRMARY.

The "Eighth Annual Report" of the board of trustees, for the year 1887, shows an increase in the amount of work done by the institution during the last year, and no lack of indications of a continuance of the excellent manner in which both its professional and its business affairs have been managed. Appended tables of the ophthalmic and aural affections that came under treatment show the wide range of the services rendered by the medical staff.

THE NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL.

By the "Twentieth Annual Report" of this institution, for the year ending September 30, 1887, we are reminded anew of the good work which the institution accomplishes, not the least of which is the annual course of lectures given by Dr. Shaffer, the attending surgeon in charge.

THE NEW YORK QUARANTINE ESTABLISHMENT.

Like everybody else, the State Board of Health thinks that the New York quarantine station is in need of a thorough overhauling. It prefers not to recommend any definite plan of its own, but, knowing that the work required to put the establishment in proper order will be costly, and considering that the officers of the State are fully competent to plan and advise in the matter, it suggests that the Health Officer of the Port of New York and the State Engineer should prepare the plans. It thinks, however, that the plans ought finally to be submitted to itself for approval.

LEGISLATORS AND SANITARY MATTERS.

Much of the time of the fourth annual meeting of the National Conference of State Boards of Health, held in Washington last September, the proceedings of which the State Board of Health of Michigan has published, was devoted to the consideration of methods of accomplishing sanitary legislation. One of the speakers said frankly that in his opinion the plan of educating the people up to the point of demanding such legislation was too slow a process; the best way was to secure the services of some recognized leader in each house of the Legislature, the other members of which would for the most part follow him without question. Another speaker gave a quaint illustration of the difficulty of impressing politicians with the importance of sanitary matters. The Hon. Mr. F., of his State, he said, having been spoken to on the subject by a member of the State board, had replied: "Oh, my God! don't bore me about that. When I was in the Senate a set of d——d cranks bored me to death."

A GOOD WORD FOR A HOSPITAL.

Appreciation of the benefits received in a hospital is, we believe, by no means uncommon among those whom injury or disease happens to make the subjects of its care, but such a thing as the public expression of the feeling is rare indeed, while it is by no means infrequent for churlish persons to give vent to a far different sentiment in the newspapers. We are glad, therefore, to see that a gentleman living in Newark has written a letter to the editor of the "Evening Post," in which, after stating that it was lately his fortune to be taken to the Chambers Street Hospital in an ambulance, he speaks in warm commendation of the treatment that he received during a stay of over two weeks in the institution, and expresses his gratitude to the surgeons for their skillful and faithful care. He further states that what he heard from all the convalescents was to the effect that they were well satisfied to have been brought to the hospital.

CANCER OF THE BLOOD.

It has often been maintained more or less explicitly that the blood, although a liquid, is to all intents and purposes a tissue. Proceeding upon this doctrine, M. Bard ("Lyon médical," 1888, No. 7; "Lancet," March 3, 1888) broaches the theory that leucocythæmia is in reality cancer of the blood, and explains the absence of a definite tumor by the obedience of the neoplasm to the law of the preservation of the essential attributes, including the liquid state, of its parent tissue.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 20, 1888:

DISEASES.	Week ending Mar. 13.		Week ending Mar. 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	4	0	11	4
Scarlet fever	144	18	160	29
Cerebro-spinal meningitis	6	5	4	5
Measles	57	3	57	7
Diphtheria	115	42	144	58
Small-pox	13	1	13	6

The New York Polyclinic.—The faculty of the Polyclinic gave a dinner to the directors of the institution at Delmonico's on Tuesday evening of this week.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 11 to March 17, 1888:*

Sternberg, G. M., Major and Surgeon. Ordered to proceed to Brunswick, Ga., on official business, and upon completion of same will return to his proper station. S. O. 57, A. G. O., March 10, 1888.

Crosby, William D., First Lieutenant and Assistant Surgeon. Granted leave of absence for two months, with permission to apply for an extension of one month, to take effect after being ordered to a new station. S. O. 60, A. G. O., March 14, 1888.

Kean, Jefferson R., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Sill, Indian Territory, and ordered for duty at Fort Robinson, Neb. S. O. 56, A. G. O., March 9, 1888.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending March 10, 1888:*

Hutton, W. H. H., Surgeon. To proceed to Brunswick, Georgia, on special duty. March 5, 1888. Detailed as president of board to select site for Gulf Quarantine Station. March 10, 1888.

Carter, H. R., Passed Assistant Surgeon. Detailed as recorder of board to select site for Gulf Quarantine Station. March 10, 1888.

Wasdin, Eugene, Passed Assistant Surgeon. Granted leave of absence for thirty days. March 8, 1888.

Bratton, W. D., Assistant Surgeon. Ordered to examination for promotion. March 7, 1888.

Society Meetings for the Coming Week:

Monday, *March 26th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement.

Tuesday, *March 27th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private): Medical Society of the County of Lewis (quarterly), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *March 28th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Auburn, N. Y., City Medical Association; Philadelphia County Medical Society (conversational); Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *March 29th:* Cumberland, Me., County Medical Society (Portland).

Letters to the Editor.

INSUFFICIENCIES OF THE OCULAR MUSCLES.

33 West Thirty-third Street, *March 18, 1888.*

To the Editor of the New York Medical Journal:

Sir: In the letter of Dr. Derby to the Journal of March 10th, the two propositions which include the substance of the communication appear to be incorrect. In referring to Dr. Claiborne's remarks about hyperphoria, Dr. Derby asserts that in the "New York Medical Journal" for June, 1873, he discussed this same subject (under another name), and reported the correction of the trouble in a case by the use of a prism.

I suppose that no one familiar with the literature of ophthalmology doubts that prisms have, from time to time, been used in a variety of ways, but in the case as reported by Dr. Derby a prism was not used for the correction of hyperphoria. Hyperphoria "is that condition in which, with the ability to maintain binocular vision, there is a tendency of one visual line in a direction above that of the other." * There is a certain degree of latitude within which, in muscular irregularities, binocular vision may be maintained. I do not hesitate to say that Dr. Derby's case was out of the range of this latitude. Insufficiency of the interni of 9° may not of itself necessarily imply habitual failure to maintain binocular vision; and one may see singly with an insufficiency of 4° in the vertical direction. In a case combining these two conditions it is safe to assume that binocular vision was not maintained, and direct proof would be required to show that it was maintained. In this case we are left in no doubt in this respect, for the report assures us that after operations on one of the external and one of the superior recti muscles "binocular vision was secured." If binocular vision was secured by these two operations it did not exist before. It has never been questioned, so far as I know, that von Graefe performed tenotomy of the superior rectus, but his writings do not show that he performed this operation for the relief of hyperphoria.

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* "N. Y. Med. Journal," Dec. 4, 1886; "Archives of Ophthalmology," No. 2, 1887.

The second statement of Dr. Derby, that treatment, operative and by prisms, of the vertical as well as of the lateral muscles "has been the common property of all competent ophthalmic surgeons both here and abroad for at least twenty years," if intended to refer to strabismic conditions, is and has been unquestioned and there is nothing at issue. But, if it is intended to apply to the condition described as hyperphoria in its relation to asthenopia, it is entirely incorrect. I need bring only one or two facts to bear upon this point.

In 1876, at the International Ophthalmological Congress held in New York, Dr. C. R. Agnew and Dr. H. D. Noyes presented analyses, the first of 1,060, the second of 1,079 cases of asthenopia. These groups represented respectively the experience in private practice of each of these surgeons in this class of cases. The large number included in each analysis indicates the extensive experience of these observers. Dr. Agnew found, among the causative influences of the affection, refractive errors, insufficiency of the interni, insufficiency of the externi, and other conditions, but no case in which insufficiency of the vertical muscles was supposed to have induced asthenopia. Dr. Noyes, in his very elaborate analysis, found his smallest group, consisting of six, in which "failure of equilibrium belonged to the muscles moving the globe upward and downward." In all these six cases the examination was made, not for faulty tendencies, but for faulty directions of the optic axes. "The search was for double images of whose existence in any part of the field the patient had been unconscious." In three of these six cases of double vision a distinct diagnosis of paresis was made.

Thus we have the experience of two observers, covering about one half the time during which Dr. Derby would have his readers believe that the surgical and other treatment of hyperphoria was the common property of all competent ophthalmic surgeons, and yet in these large experiences not one case appears in which the condition described as hyperphoria was found.

Much more evidence might be brought to show that the subject of vicious tendencies of the optic axes in the vertical direction, short of diplopia, has been greatly neglected until quite recently. It has not, I presume, been doubted by any one who knows that there are half a dozen muscles engaged in maintaining the position of each eye, that irregularities might occur in any direction, and no well-informed person doubts that prisms have, in ophthalmic practice, been used with bases up or down; but the absolute absence of facts bearing upon hyperphoria, in the statements of those who have alleged that a knowledge of this condition has long been common property, only serves to emphasize in a very unexpected manner my statement, which is, I believe, the subject in question, that "special attention was first called to the condition of hyperphoria *as an important and frequent anomaly*" within a very recent period.

George T. Stevens.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of January 19, 1888.

The President, Dr. A. Jacobi, in the Chair.

A Method of Preventing Diphtheria.—Dr. A. Caillé read a paper on this subject. Probably, he said, every experienced practitioner had observed that in certain families one or more members regularly had diphtheria in the spring or autumn. This was particularly true of children. It had occurred to him that such persons might harbor the microbes or other essentials to the development of the disease in the nasal and oral cavities. The germs of diphtheria would readily take hold of damaged mucous membrane. In trying to establish the correctness or fallacy of this view of self-infection, he had selected eight cases, in all of which the patients had suffered from true diphtheria twice or more prior to October, 1885. The families were well known to him, and they had occupied the same houses or had the same surroundings for a number of years. The parents of the children were intelligent enough to carry out his instructions. All carious teeth were to be filled or extracted, the teeth to be examined from time to time; the mouth was to be thoroughly rinsed three times a day, after each meal, with either a three-per-cent. solution of chlorate of potassium in water, a five-per-cent. solution of liquor sodæ chloratæ, or a saturated solution of borax in water. Besides using it as a mouth wash and gargle, some of the solution was to be drawn into the nose. From October, 1885, to December, 1887, not one of the persons experimented upon suffered from diphtheria, although five of them had several attacks of acute pharyngitis and amygdalitis. There was diphtheria in the family of three of the number, but they did not contract the disease. While these cases were insufficient to furnish absolute proof of the benefit of such prophylactic measures, yet they went far to establish the belief that, if the nasal and oral cavities were kept clean by a mild antiseptic solution, the frequency of diphtheritic inflammation would be decidedly reduced. The treatment of diphtheria was a perennial subject for discussion all over the civilized world, yet prophylaxis had not received the attention which it demanded. If we scrutinized what had been called diphtheria, we would have to admit that we could not say positively what the nature of the diphtheritic virus was, what its mode of propagation was, or why it showed a predilection for certain persons. If we admitted our ignorance of the true nature and significance of so-called diphtheria, we must admit our inability to distinguish clinically between the contagious diphtheria and some of the non-contagious affections of the oral and nasal cavities, and it was therefore necessary to look with suspicion upon all such changes and apply prophylactic methods. The correctness of this view, promulgated by Dr. Jacobi, had been doubted by many in 1860, but was accepted by the majority in 1888. As there was no specific for diphtheria, the author thought it was not too much to say that in the present state of our knowledge practical methods of prophylaxis would prove of more value than methods of treatment. Regarding prophylaxis, there were, in the first place, general preventive measures, relating to hygiene, clothing, food, and isolation; secondly, there were prophylactic methods within the family, directed to or against the individual. Without underestimating general sanitary laws, he would suggest that in a large city only a limited number of the inhabitants could live in salubrious surroundings. He was convinced, therefore, that, while the benefits of general sanitary science should be taken advantage of so far as practicable, yet the utmost importance should be attached to personal preventive measures. In the vast amount of literature on diphtheria the subject of individual prophylaxis had barely received mention. The overheating of school-rooms and of living-apartments should be most emphatically denounced as dangerous. Isolation of the sick should be insisted upon. The management of isolation-houses for the sick poor should be such as to readily gain their confidence. Enlarged tonsils should be removed. Carious teeth should be removed or filled promptly. Parents should inspect their children's mouths and throats daily before they went to school. Children should learn to gargle at an early age. Children suffering from apparently simple sore throat should not go to school until they were well. Kissing upon the lips should be forbidden. Children old enough to gargle should be taught to do so after each meal, a weak solution of an antiseptic being used, a few drops of which should be dropped into the nose.

The President had understood the author to say that the germs of diphtheria, whatever they might be, remained in certain cases in the mucous membrane or the glands, and that under favorable circumstances they would become active again and give rise to an attack of diphtheria. He believed it to be true that the poison could remain in the mucous membrane, and particularly in the neighboring lymphatic glands. Persons with a healthy mouth and pharynx were less easily infected than those who had a catarrh of any form. The slightest scratch might give rise to erysipelas, and the same was true of diphtheria. One point in the prevention of diphtheria was of great importance: everybody had seen cases in which the patient was apparently about getting well, but suddenly had a new attack, and the attacks might thus be renewed four or five times, the final one perhaps ending fatally. This was due to renewed infection from the curtains or other things in the room occupied by the sick. In these cases prevention of renewed attacks was possible. If there were only two rooms, the child should be transferred from the one to the other at intervals of a few days, and the vacant room cleansed and thoroughly ventilated, and, if possible, disinfected.

Dr. L. E. Holt had the impression that enlarged tonsils favored the development of diphtheria and made the attack more severe.

Dr. Caillé said he had removed the tonsils of two children who had never had diphtheria, but who had frequently suffered from inflammatory trouble of the throat, and some days or weeks after the operation they contracted true diphtheria. But he did not think the removal of the enlarged tonsils had had anything to do with the occurrence.

The President was positive that in a number of cases in which enlarged tonsils had been reduced, diphtheria had not been seen afterward, whereas diphtheritic affections had been frequent before.

Dr. J. E. Winters spoke of preventing the spread of diphtheria in a family in which some member was already suffering from the disease. Besides isolation, as far as was practicable, and disinfection, he examined the throats of the well members daily, regulated their diet, and invariably gave large doses of tincture of chloride of iron, twenty drops to children three times daily, also tonic doses of quinine and small purgative doses of calomel.

The Induction of Premature Labor for Amaurosis and Amblyopia in the Albuminuria of Pregnancy.—Dr. T. R. Pooley read a paper on this subject. Among the indications for abortion from the albuminuria of pregnancy, disturbance of vision had not received attention commensurate with its importance. It had long been known that disturbance of vision was prone to occur at any time during pregnancy, and that it might recur in several successive pregnancies, also that it was more likely to occur during the latter months, and might last for weeks afterward, and in some cases become permanent. The disturbance of vision in the albuminuria of pregnancy might be more or less marked; it might come on suddenly or by degrees; it might be more or less transitory; there might be complete loss of sight; it might exist without appreciable change in the fundus oculi; again, the neuro-retinitis might be well marked on examination. These facts being well established, it seemed strange that only until recently had the induction of premature labor been suggested in these cases. Were we ever justified in inducing premature labor solely to save the sight, whether other symptoms commonly recognized as indications for this step were present or absent? To Dr. Loring was due the credit of first suggesting and writing upon the indications for premature labor in disturbed vision, although the case which that author had made the basis of his paper was not one in which there were other evidences of disease of the kidneys. Dr. Loring's paper had been followed by one by Dr. W. O. Moore.

Dr. Pooley briefly related a series of cases of disturbed vision from the albuminuria of pregnancy, in which either the patients were allowed to go to full term or premature labor occurred spontaneously or was induced artificially, to see whether the results on vision would be improved thereby. Some of the cases were those reported in the papers of Loring, of Moore, and of Holmes, of Chicago. The author thought nature had given us a hint as to the treatment of amblyopia and amaurosis in the albuminuria of pregnancy, when in some instances spontaneous abortion had occurred with the result of improvement of vision, with improvement in the more unpromising cases, and with full restoration of sight in the more favorable ones. The author thought that in all cases of pregnancy it was desirable not only to examine the urine for albumin from time to time, but to make an ophthalmoscopic examination. The fact that varying degrees of blindness did not appear until toward the end of pregnancy did not prove that a retinitis had not existed for some time. The evidences of the albuminuria of pregnancy not infrequently showed themselves in the eye before they did in the urine. When uræmic amaurosis existed, labor should be induced without waiting for the supervention of other symptoms to endanger sight and life. In neuro-retinitis with grave organic lesion of the retina and optic nerve, if the child was not yet dead from the effects of the kidney disease, but was viable, it was not only justifiable, but necessary, to bring on premature labor. In some cases the responsibility of deciding whether abortion should be brought on would have to lie with the oculist alone. Pregnant women who had had some loss of vision in previous pregnancies should, with their husbands, be informed of its nature, and of the dangers of its return.

Dr. E. G. Loring emphasized the importance of early examinations with the ophthalmoscope during pregnancy. It was thus easy to detect the retinitis of albuminuria. Regarding the frequency of such a retinitis, he thought Dr. Pooley had underestimated rather than exaggerated it. The inflammation might begin early in pregnancy and continue throughout its course; then, although the patient might see well after delivery, shrinkage might begin, and for the first time vision be seriously interfered with. He related a case illustrating the fact that the retinitis might develop in connection with other uterine disturbances than the albuminuria of pregnancy. The case was that of an unmarried woman who had disturbance of vision and changes visible with the ophthalmoscope during suppression of the menses; the eye symptoms would return with each recurrence of the menstrual disorder. Kidney disease could not be detected. He thought there was a delicate peripheral optic neuritis with which the kidneys had nothing to do.

Dr. Fruitnight had attended over a thousand cases of pregnancy, in some of which there had been the eclampsia and other symptoms of albuminuria, but in none had he seen disturbance of vision.

Dr. Robert Murray said, with regard to the value of examinations with the ophthalmoscope during pregnancy, that of pregnant women having albuminuria only a small proportion had eclampsia, and of those having eclampsia only a small proportion had disturbance of vision; yet it had been said that a large percentage of pregnant women had ocular changes visible with the ophthalmoscope. From these facts and his own experience with the ophthalmoscope, the speaker had come to the conclusion that the general use of this instrument on pregnant women would only give rise to unnecessary anxiety on the part of the physician and patient.

Dr. Pooley agreed with Dr. Loring that in most cases the affection of the kidney was acute, and that the prognosis as to life was good.

Book Notices.

Anatomy, Descriptive and Surgical. By Henry Gray, F. R. S., etc. The Drawings by H. V. Carter, M. D., etc., with Additional Drawings in Later Editions. Edited by T. Pickering Pick, Surgeon to, and Lecturer on Surgery at, St. George's Hospital, etc. A New American from the Eleventh English Edition, thoroughly Revised and Re-edited, with Additions, by William W. Keen, M. D., Professor of Surgery in the Woman's Medical College of Pennsylvania, etc. To which is added "Landmarks, Medical and Surgical," by Luther Holden, F. R. C. S., with Additions by William W. Keen, M. D. Philadelphia: Lea Brothers & Co., 1887. Pp. 1100.

This well-known text-book might have held its own for many years more without any additions or corrections; for, although the faults of previous editions have been obvious, its great merits as a student's book are so conspicuous that they would still have maintained its status as the favorite work on the subject of human anatomy. It is therefore highly to the credit of the writers who have contributed toward making it what it now is that they should have done their work as thoroughly as they could have done it if a damaging rival had sprung up. Not the least valuable of the additional work has been done by the American editor. Both he and the publishers are to be praised for the improved appearance of the book, particularly in the matter of the illustrations. The use of colors makes many of them more striking than they were before. It is safe to say that Gray's "Anatomy" is destined to remain a popular text-book for years to come.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of Man: Data of their Nomenclature, Classification, and Genesis. By John W. S. Gouley, M. D., Surgeon to Bellevue Hospital. New York: J. H. Vail & Co., 1888. Pp. 24–25 to 408.

Interstitial Salpingitis. By H. J. Boldt, M. D., New York. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Diseases of the Heart and Circulation in Infancy and Adolescence. By John M. Keating, M. D., Obstetrician to the Philadelphia Hospital, etc., and William A. Edwards, M. D., Instructor in Clinical Medicine and Physician to the Medical Dispensary in the University of Pennsylvania, etc. Illustrated with Photographs and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 9 to 215. [Price, $1.50.]

The Year-book of Treatment for 1887. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co., 1888. Pp. viii–336. [Price, $1.25.]

On the History, Nature, and Treatment of Syphilis. By J. L. Milton, Senior Surgeon to St. John's Hospital for Diseases of the Skin. London: Henry Renshaw, 1887. Pp. x–377.

Puncture of the Intestine for Tympanites. By J. Chris. Lange, M. D., Professor of the Principles and Practice of Medicine at the Western Pennsylvania Medical College. [Reprinted from the "Pittsburg Medical Review."]

On a New Treatment of Chronic Metritis, and especially of Endometritis, with Intra-uterine Chemical Galvano-cauterizations. By Dr. Georges Apostoli, Member of the Society of Medicine of Paris, etc. With Nine Figures in the Text. Translated by A. Lapthorn Smith, B. A., M. D., etc. Detroit: George S. Davis, 1888. Pp. 119.

Photographic Illustrations of Skin Diseases. An Atlas and Text-book combined. By George Henry Fox, A. M., M. D., etc. Hand-colored Plates. Nearly One Hundred Cases from Life. Parts 3 and 4. Second Series, Complete in Twelve Parts. New York: E. B. Treat, 1888.

The Lettsomian Lectures, delivered before the Medical Society of London, January, 1888. On Some Points in the Surgery of the Urinary Organs. By Reginald Harrison, F. R. C. S., Surgeon to the Liverpool Royal Infirmary, etc. [Printed by Request.] London: J. & A. Churchill, 1888.

A Very Valuable Lesson for those who use Anæsthetics. By Julian J. Chisolm, M. D., Professor of Eye and Ear Diseases in the University of Maryland, etc. [Read before the Baltimore Academy of Medicine.]

Reports on the Progress of Medicine.

MATERIA MEDICA AND THERAPEUTICS.

Untoward Effects of Antipyrine.—Dr. P. Guttmann ("Fortschr. der Med.") publishes two cases in which antipyrine caused dangerous symptoms. In the one case there were violent palpitations, intense cyanosis, and a feeling of the want of air; in the other there were great excitement (pulse 132), œdema, and ephemeral amaurosis, together with pruritus and urticaria. These symptoms appeared on the administration of a few gramme (15-grain) doses. Recovery took place in both cases under the usual treatment with camphor, sinapisms, etc., but in the second case this did not occur until the third day.

Observations on Iodoform.—König, the well-known surgeon ("Ther. Monats."; *ibid.*), has been stimulated to publish his observations on the *modus operandi* of iodoform by the rather startling experiments of Heyn and Roosing. These authors, as it is well known, found that bacilli thrived and developed in a culture medium containing iodoform. König does not underestimate the worth of these investigations, but thinks that they can be of importance only when combined with observations in disease. The great value of iodoform consists in its influence upon the secretion of wounds. In fresh wounds the secretion is entirely arrested. The same applies to the resection of tuberculous joints and the cavity wounds. In these instances one can not avoid the inference that the drug has a specific effect upon the tubercle bacilli. Even in cases in which rapid primary union does not occur, and in which tuberculous areas have been left here and there, the treatment of the wound with iodoform prevents a recurrence of the disease. In the treatment of wounds in cavities, such as the mouth, rectum, vagina, etc., the property of the drug in keeping the wound dry for about two weeks is of incalculable value.

P. Bruns, as a practical surgeon, expresses (*ibid.*) himself somewhat similarly to the foregoing author on the value of iodoform as an anti-tubercular agent. This property of the drug, he says, is especially noticeable in tubercular cold abscesses treated by injections of iodoform. Histological examinations have shown that the tubercle bacilli in the abscess walls disappear entirely in the course of a few weeks.

Binz (*ibid.*) throws some light by experimental investigation upon the drying virtue of iodoform on wound secretion. He applied a few drops of a concentrated oily solution of iodoform upon a frog's mesentery which was undergoing active suppuration. It was observed that the excessive migration of the white blood-corpuscles was first checked and then completely arrested.

The Action of Alcohol on Pepsin.—Dr. Bardel ("Nouveaux remèdes," 1887, No. 18) has undertaken to determine, by a number of experiments, the solubility of pepsin in alcohol, and the influence of the latter upon the physiological action of pepsin. He found that alcohol of 95° precipitated the greater part of the pepsin, while in alcohol of 50° pepsin was as soluble as in water (1 in 15 parts). The physiological activity of pepsin remained unimpaired in alcohol of 20°, but from 25° to 70° it proportionately became less. Above the latter degree it was almost *nil*. The author draws attention to the fact that his experiments related only to alcohol and not to wines, some of which contain considerable quantities of tannin, which may have a deleterious effect upon the pepsin.

Hydrate of Amylene, a New Hypnotic.—Dr. J. De Mering ("Nouveaux remèdes," 1887, No. 21) writes of this latest hypnotic that it belongs to the group of tertiary alcohols, and that it is a colorless mobile liquid, soluble in eight parts of water and in alcohol in all proportions. It has an ethereal taste, resembling camphor slightly. In rabbits it is eliminated with the urine as a compound of glycosuric acid, but in man and in dogs it is oxidized in the economy, for the most part, as ordinary alcohol. While experimenting with the drug the author found that rabbits and dogs fell into a profound sleep after its ingestion, and this circumstance led him to make physiological experiments on animals. On injecting a small quantity ($\frac{1}{6}$ grain) under the skin of a frog, motor paralysis and loss of consciousness soon followed, and then in a short time profound anæsthesia, and finally suppression of the reflexes. After several hours the frog recovered slowly but completely. Rabbits, after having been given from 2 to 3 grammes (♏xxx to xlv) of the hypnotic, fell into a profound sleep lasting from six to eighteen hours. On awaking, the animals seemed quite well and ate heartily. A dog was given, about mid-day, 8 grammes in 300 grammes of water (ʒ ij in aquæ ℥ vjss.) by the stomach. Half an hour afterward he fell into a deep sleep, which still continued at 11 P. M. The respirations, which were first 20 in the minute, were now 16, but they were deep and regular. The pulse was good. The dog was carried as if dead to his kennel in the laboratory. Next morning he was quite alert and had a good appetite. To compare the action of hydrate of amylene with paraldehyde, the same dog, eight days later, was given the same quantity of the latter drug. Half an hour afterward the dog appeared intoxicated, but sleep did not come on during the whole day. Unlike chloral and other hypnotics, hydrate of amylene has no effect upon the heart and the circulation. It has but a very slight influence upon respiration. In moderate doses it appears to act particularly upon the cerebrum; in very large doses it affects the spinal cord and medulla oblongata, the reflexes disappear, the respirations are arrested, and eventually the heart also is stopped.

During the past two years the author has employed the drug therapeutically in 60 cases, giving in all 350 doses, which varied from 3 to 5 grammes (♏xlv to xc). Most of the patients suffered with nervous insomnia. It was also given in the insomnia of the aged and of convalescents, in that form associated with anæmia, in phthisical patients, and in febrile conditions, such as typhoid and articular rheumatism. In all these instances a dose varying from 3 to 5 grammes (♏xlv to ♏lxxv) was followed by a quiet sleep of six to twelve hours without any preliminary excitement. In the insomnia resulting from painful conditions it is not so useful as hydrate of chloral. Combined, however, with morphine, it is of value. As a narcotic it stands midway between chloral and paraldehyde. One gramme of chloral is equal to two of hydrate of amylene, and the latter is equal to three of paraldehyde. It is preferable to chloral because even in the largest doses it has no injurious effect upon the heart and upon respiration. It may be administered with gum arabic in water.

Creolin.—Fröhner ("Fortschr. der Med."), after experimenting with creolin, says that it is a non-poisonous antiseptic and is preferable to carbolic acid. It exists as a syrupy liquid soluble in water and in alcohol in all proportions. He has found it serviceable in the following conditions: (1) in scabies, (2) as an antiseptic (3-per-cent. solution), (3) in chronic non-parasitic eczemas, (4) as an inhalation in infectious bronchitis and broncho-pneumonia, (5) in infectious or zymotic gastric and intestinal catarrh, to be given internally in doses of one to two grammes (♏xv to ♏xxx) of a 1-per-cent. solution.

The Physiological and Therapeutical Effects of Salol.—Dr. Lombard ("Bull. gén. de thér.," Sept. 15, 1887), under the direction of Dubief and Nicot, in the laboratory of the Cochin hospital, has made several experiments with salol upon rabbits, dogs, and healthy human beings. One gramme (gr. xv) reduced the temperature of a rabbit from 39·6° C. to 38·3° after the lapse of three hours. The reduction of temperature does not seem to bear any relation to the quantity of the drug given. Five doses of one gramme each were given to a rabbit every quarter of an hour. After the second dose the temperature remained stationary at 37·4°, having been 39·3° before the drug was given. Salol is not a toxic, and even in considerable doses it is not followed by any untoward effects. Its action upon the respiration is rapid; it increases the number of the respiratory movements, while it diminishes their amplitude. After the lapse of an hour all effect passes off. On the heart and the circulation its effect is *nil*. From six to eight grammes (ʒ jss. to ʒ ij) were given to a healthy individual with no results. The author summarizes his experience with the drug in rheumatism as follows: (1) The pains are mitigated on the third day and disappear entirely on the sixth day; (2) the effusion into the joints disappears two days later; (3) as a specific it is inferior to salicylate of sodium; it seems to have no influence upon the course of the disease; (4) on account of its innocuity it is very useful in subacute rheumatism to relieve pain, and is also indicated in the rheumatism of infants. In pyrexia the results were negative. In typhoid fever it had no influence upon the temperature curve. The same observation was made in pneumonia, pulmonary tuberculosis, the exanthemata, erysipelas, and intermittent fever. The drug was found beneficial to relieve the pains of various spinal affections.

Acetanilide as an Analgesic.—Dr. O. Seifert ("Ctrlbl. f. d. ges. Ther.," Oct., 1887; "Wiener med. Woch.," 1887, No. 35) has employed the drug in the following fifteen cases: three of trigeminal neuralgia, two of migraine, six of anæmic cephalalgia, one of diffuse nervous headache, one of neuralgia resulting from a cicatrix, and two of supposed migraine It was given as follows: One dose of 0·5 gramme (gr. vijss) in a capsule was ordered; this was repeated in one or two hours, and if the pain was not relieved a third dose was administered. As a rule, some wine was given afterward. In those cases where the pain was continuous or irregular the same quantity was given one hour after breakfast, two hours after dinner, and three hours after supper. Untoward effects were never observed when this method was followed, and the administration was kept up for eight days. The results in the trigeminal neuralgia were brilliant; in one case of migraine the drug proved efficacious after several other remedies had failed. It failed in one case of headache from an unknown cause, and in the case of neuralgia resulting from a cicatrix.

Methylal as a Hypnotic.—Mariet and Combemale ("Progrès médical," July 2, 1887) have studied the action of methylal with a view to determine its therapeutic value in mental disease chiefly. It is a volatile fluid, resembling ether in odor, and is soluble in water, in alcohol, and in oil. Experiments on animals show its action to be almost entirely hypnotic, the doses required being smaller and smaller as the animals tested are higher in the scale of the *Vertebrata*. In their experiments it did not accumulate in the body, and it took as much as twelve grains to the pound weight of the body to produce poisoning. In doses of ♏xv to ʒ j no bad effects followed. In sixteen cases of mania, more or less acute, the result was that in the beginning of acute attacks it produced no sleep, even in doses of ʒ ij, but in severe relapses a somewhat smaller dose at bedtime gave a quiet sleep. It was found that the patient became accustomed to the drug after five or six days and the dose had to be increased. Of twelve cases of dementia with attacks of excitement it succeeded well in ten cases, but tolerance, as before stated, was very easily produced. In alcoholic forms of insanity it was not found of any value. The general conclusions reached are that in some of the milder cases of mania and in many cases of chronic dementia, either senile or paralytic, it is a hypnotic which is of use for five or six days, but one to which the patients very soon get accustomed. An important point in its favor seems to be that it is quite innocuous. Large doses, if they fail to produce sleep, at any rate do no harm. Its expense at present is inconvenient, but this may be remedied ere long.

The Vermifuge Properties of Sida Floribunda.—Dr. M. Martinet (" Nouveaux remèdes ") relates how his attention was attracted to this plant by the instinct of his dog, which, after having been sick for several days, set out himself searching for a remedy. This he found in the leaves of the *Sida floribunda*, and after having eaten some of the leaves he was relieved at the same time of his sickness and of a large number of intestinal worms. This malvaceous plant is common in the neighborhood of Lima. It is rich in mucilage, but a chemical analysis failed to find anything to which anthelminthic properties could be assigned. A microscopical examination, however, showed that all the leaves of the plant were covered with minute spines, which the author thinks fail to be digested in the stomach on account of their cellulose structure, and act as a mechanical vermifuge in the intestines.

Cocaine Locally in the Vomiting of Pregnancy.—Dr. William Duncan ("Lancet," Oct. 15, 1887) reports three cases of vomiting in pregnancy in which a 15-per-cent. solution of cocaine painted over the vaginal vault and applied to the cervical canal for the distance of three fourths of an inch was followed by almost immediate relief. In two of the cases the cervix uteri was sensitive on pressure. The author does not build too much upon his results, but thinks that they warrant a further trial of the remedy.

Phenacetine, a New Antipyretic.—Dr. G. Kobler (" Wiener med. Woch.," 26 and 27, 1887; "Deut. Med.-Zeit.," 1887, No. 94) has been experimenting with this drug in Bamberger's clinic in Vienna and has found it an antipyretic which can compare favorably with other antipyretics, and is free from any untoward effects. It occurs in the form of a faint red powder, without smell or taste, rather insoluble in water, but soluble in glycerin and in alcohol. In doses of 0·5 to 0·7 gramme (gr. vijss. to gr. xiss.) it has no effect upon healthy individuals, nor does it reduce the normal temperature, but in febrile conditions, even in doses of 0·3 to 0·4 gramme (gr. ivss. to gr. vj), it never fails to have an antipyretic effect. As a result of his experience, Kobler advises a dose of 0·5 gramme (gr. vijss.) to commence with, which may be increased to 0·6 to 0·7 gramme (gr. ix to gr. xss.). He has never observed nausea or vomiting following its administration. He gave it in fifty cases of fever, and, while it always reduced the temperature, it seemed to have no influence, either for good or for bad, on the course of the disease. Its maximum effect was observed in from four to six hours. After this the temperature began to ascend again and reached its original height in from eight to ten hours. The reduction of temperature was not followed by any increase of perspiration even in predisposed persons. Neither cyanosis nor collapse was ever observed. In the majority of instances the reduction of temperature was attended with a feeling of well-being. The author sums up as follows: 1. Phenacetine is an energetic antipyretic. 2. It possesses no disagreeable or dangerous features. 3. The administration of a single large dose, from gr. viiss. to gr. xss., is more efficacious than hourly small doses.

On the Action of Aniline and Oleum Gaultheriæ.—Dr. S. Ischirwinski (*ibid.*), after a great number of experiments on various animals, draws the following conclusions: 1. Aniline and oleum gaultheriæ have a toxic effect whether given by the mouth or injected under the skin or directly into the blood. 2. Both drugs have a predominant effect upon the respiratory center, making the blood at the same time venous. 3. Oleum gaultheriæ in its action upon the heart and respiration resembles salicylic acid and its salts. 4. Aniline is more toxic than oleum gaultheriæ. Its action is more extensive, and, in addition to its influence upon the respiratory center and heart muscle, it affects the inhibitory apparatus of the heart, and also the spinal cord. 5. The greater volatility of oleum gaultheriæ explains also its readier action on inhalation. On the ground of these facts, the author warns against the administration of these drugs in large doses.

Ephedrine, a New Mydriatic.—Dr. Miura, of Tokio (" Berlin. klin. Woch.," Sept. 19, 1887), has been experimenting with a 10-per-cent. solution of this new alkaloid with the following results: 1. The instillation of one or two drops was followed by a dilatation of both pupils in eighteen patients that were experimented upon. 2. The dilatation was equal in both eyes when the refraction was the same and there was no inflammation. 3. The dilatation was not complete, but sufficient in all cases to give a full view of the retina. 4. The power of accommodation was not at all, or only to a small degree, paralyzed. 5. Young and old people were more susceptible than strong healthy adults. 6. In irritable and inflammatory conditions of the iris it was not followed by appreciable suppuration. 7. The duration of the mydriatic effect varied from five to twenty hours. 8. Conjunctivitis or any other ill effects were not observed after its use for fourteen consecutive days. 9. Neither an increase nor a decrease of intra-ocular pressure was observed.

Bichloride of Methylene as an Anæsthetic.—Dr. Eichholz and Professor Dr. Genther (" Deut. Med.-Zeit.," 1887, No. 67) have published an interesting article upon this anæsthetic. After giving a short historical review, they narrate the results of their experiments on guinea-pigs and rabbits, but, owing to the great susceptibility of the latter to anæsthetics, guinea-pigs principally were used. The animals were first narcotized with pure chloride of methylene, the pulse, the temperature, the respirations, and the sensibility of the skin noted, and then the same animal in a few days was narcotized with pure chloroform and note was taken of the same physiological functions. The results of these experiments may be expressed as follows: 1. Narcosis sets in at about the same time with each drug. 2. With each there is a stage of excitement. 3. With chloride of methylene there is no increase of the pulse during the stage of excitement, while with chloroform there is. 4. During narcosis a slowing of the pulse and of respiration occurs with each drug, but it is more rapid and more intense with chloroform. Total abolition of pulse and respiration and consequent death occur much sooner with chloroform. The quality of the pulse is much more unfavorably influenced by chloroform than by methylene bichloride. 5. The reduction of temperature is about equal with both drugs; the greatest reduction was noticed in chloroform narcosis (from 35·5° C. to 29° C.). 6. With chloride of methylene there is an increase of the flow of saliva, but not with chloroform. 7. With chloride of methylene contraction of the pupil is not a constant phenomenon. 8. With chloride of methylene rigidity of the neck is more marked than with chloroform, but rigidity of the extremities is more marked with chloroform. The English methylene, as it is found in commerce, is a mixture of chloroform and methylal alcohol. Experiments were made with this, and the results showed that the addition of methylal alcohol slightly improved the anæsthetic properties of chloroform.

The authors draw the following conclusions from their experiments: (1) That the preparation heretofore sold as bichloride of methylene is a mixture of chloroform and methylal alcohol; (2) that this mixture of chloroform and methylal alcohol is to be preferred to pure chloroform; (3) that the pure bichloride of methylene brings about anæsthesia as quickly and as deeply as either of the foregoing preparations, but that it is not so lasting in its action; (4) that pure bichloride of methylene is not nearly so dangerous as either of the foregoing preparations.

Pyridine and Collidine in Respiratory Affections.—Dr. Dandieu (*ibid.*), following G. Sée's recommendations, comes to the following conclusions regarding pyridine and its correlative, collidine: 1. Pyridine is indicated in all cases of angina pectoris. Its action is prompt and it prevents new attacks. 2. In essential and symptomatic asthma it is preferable to morphine, both as to the duration of the effect and as to the absence of any danger. 3. It is indicated in attacks of asthma due to the inhalation of noxious gases. 4. In the dyspnœa of bronchiectasis and of phthisis it has a surprising effect. There are no contra-indications, and a cumulative effect is not to be feared. In accordance with Sée's recommendations, the author used four to five grammes (ʒ j to ʒ j ♏xv) poured into a saucer, which was placed in the center of the room, and the patient was made to sit in one corner of the room. In urgent cases four or five drops may be dropped on to a handkerchief and this held up to the mouth and nose.

New Inventions, etc.

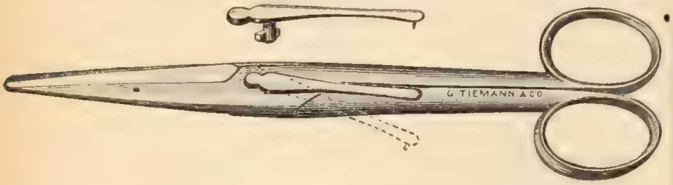
A NEW ANTISEPTIC SCISSORS AND FORCEPS LOCK.

By Charles Noah Dixon Jones, M. D.,

surgeon to the woman's hospital, brooklyn.

The objections to the ordinary separable or antiseptic lock are four: 1. It is easily broken off by careless manipulation. 2. It is not always easily cleaned. 3. In a few weeks the blades work loose, so that they do not close accurately. 4. Each time the blades of the scissors are ground the pivot must be shortened.

The new forceps lock which I introduced a few week ago (see "New York Medical Journal," Feb. 11, p. 151) is not entirely free from some of these objections. 1. The blades of the forceps or scissors are liable to become separated during the progress of an operation and cause annoyance and loss of time. 2. The pivot in time works loose. 3. It is very difficult to grind the blades of the scissors accurately, owing to the projecting arm.



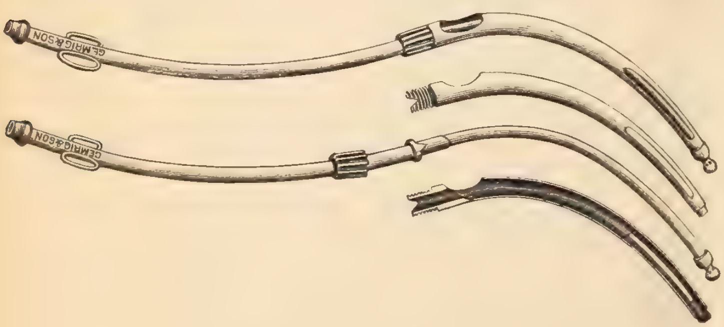
In order to overcome these difficulties, with the aid of Messrs. Tiemann & Co., I have constructed a lock after the following pattern: The pivot is attached to a spring lever, so that the scissors or forceps consist of three separate pieces, which can be easily adjusted. The blades are plain, with only an opening in each to receive the pivot, so that they can easily be ground or cleaned. The scissors are put together as follows: The blades are placed together, and the pivot is passed through the opening in each blade, and then sprung around into place.

The spring lever always serves to keep the cutting edges in apposition and to compensate for wear of the surfaces. When properly closed the blades can not by any amount of careless handling or rough manipulation become separated or twisted apart. The cut explains itself. I have recently modified the pointed catch to a Y, which grasps the handle of one blade.

163 De Kalb Avenue, Brooklyn.

DR. HOWARD A. KELLY'S TWO-WAY CATHETER.

The accompanying cut shows the construction of the two-way catheter described by Dr. Howard A. Kelly at a recent meeting of the Obstetrical Society of Philadelphia (see the Journal, March 17th, page 295).



Miscellany.

The Remarkable Survival of a New-born Child.—Dr. F. H. Lyon, of Winnipeg, Manitoba, sends us the following clipping from the "Manitoba Daily Free Press" for March 5th:

"'Minnedosa Tribune': The fact of the remarkable birth on the M. & N. W. Ry. about two years ago is at this late date a subject of dispute in a New York Medical Journal. As the readers of the 'Tribune' will remember, the birth took place between Solsgirth and Kelloe when the train was running at the rate of thirty-five miles an hour, the child in delivery being dropped through the car closet, and falling upon the rail. The train was stopped as quickly as possible, and some of the trainmen went back, expecting to find the mangled remains, but were much surprised to see the infant alive and but slightly bruised. It is living yet. A short time after the occurrence a Philadelphia physician was traveling along the M. & N. W. Ry., hearing of it, went to see the child, and on his return home published the account. His veracity is now challenged, and the New York Medical Journal, speaking of it, characterizes the man as a lunatic that would believe such an improbable story. This annoyed the Philadelphia man, and he has written to General Superintendent Baker for affidavits from the trainmen, and they have been promptly furnished. The occurrence, though seemingly outside the bounds of possibility, is strictly true, and can be vouched for by many who were on the train at the time."

We think the "Minnedosa Tribune" is in error as to our having made such a remark as it attributes to us, for we do not remember having ever heard of the story before. Nevertheless, on account of the interest of the case, we insert the substance of Dr. Lyon's letter, as follows:

"I cut the inclosed clipping from the 'Manitoba Daily Free Press' of this date. I suppose the infant referred to owes me its life, as its mother first spoke to me after the birth of the child, and I got a farmer to go back for the child on horseback from the station, about a mile. He went *alone*, and I gave him directions about tying the navel cord, etc. The child must have struck on the roof of the frame of the wheel-trucks and rolled off on to the embankment, which was my theory at the time. The train and all the hands on it went on before the return of the farmer, but I afterward learned that he found the child *alive* and without a contusion or scratch, and the same child is still living just north of Marquette Station, in Manitoba here, and Mr. E. L. Fairbanks, ex-member of Parliament, living there, will verify the facts, and give you the child's name. The temperature on the day of the child's birth was just *below* freezing, which caused me to urge the farmer to make all possible haste."

The Association of American Medical Editors will meet in Cincinnati on the Monday evening preceding the meeting of the American Medical Association. There will be an address by the president, Dr. William Porter, of St. Louis, editor of the "Weekly Medical Review"; and the following questions will be discussed: "Is the Multiplicity of Medical Journals an Advantage to the Profession?" and "How far do Medical Journals distributed by Drug Houses and Manufacturers interfere with Regular Medical Journalism?"

Coming Meetings of State Societies.—The Medical Association of Georgia will meet in Rome on April 18th, and continue in session four days. The Medical Association of Alabama will convene in Montgomery on the 10th of April, and continue in session the same number of days. The Medical Society of North Carolina will hold its annual meeting in Fayetteville on the 8th of May, and at the same time and place the Board of Health and the Board of Examiners will assemble. The annual session of the State Medical Society of Arkansas will be held at Fort Smith on April 25th, 26th, and 27th.

The New Orleans Polyclinic.—At last the South can boast of a polyclinic that affords advantages for instruction equal to any in this country. New Orleans, with its great Charity Hospital, and with but one medical college, and this in session only during the winter months, affords clinical advantages which can not be excelled in the United States, and it is very encouraging to note this recent move by the profession, for we need more clinical lectures and less didactic teaching.

The late Dr. B. H. Riggs.—Dr. Riggs, who recently died at his home in Selma, was ex-president of the State Medical Association of

Alabama, ex-vice-president of the Alabama Surgical and Gynæcological Association, an ex-member of the State Board of Censors, and a member of the Southern Surgical and Gynæcological Association. In his death Alabama lost one of her most distinguished physicians, the State association an indefatigable worker, and Selma a citizen for whom any city would have mourned.

A Sanitary Convention is to be held at Manistee, Michigan, on Tuesday and Wednesday, June 6th and 7th, under the auspices of the State Board of Health.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for February, there were 517 deaths during the month, including 1 from cholera infantum, 21 from croup and diphtheria, 4 from cerebro-spinal meningitis, 3 from dysentery, 1 from diarrhœa, 1 from erysipelas, 8 from typhoid fever, 5 from measles, 1 from mumps, 1 from pyæmia, 3 from syphilis, 6 from septicæmia, 3 from scarlet fever, and 9 from small-pox.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 16th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending February 25th corresponded to an annual rate of 21·6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Cardiff, viz., 13, and the highest in Plymouth, viz., 32·2 in a thousand. Small-pox caused 20 deaths in Sheffield, 1 in Leeds, 1 in greater London, 5 in Manchester, 1 in Liverpool, 1 in Oldham, and 1 in Blackburn.

London.—One thousand seven hundred and seventy-two deaths were registered during the week, including 18 from measles; scarlet fever, 32; diphtheria, 30; whooping-cough, 127; enteric fever, 16; diarrhœa and dysentery, 8; and choleraic diarrhœa, 1. Diseases of the respiratory organs caused 478 deaths; different forms of violence, 62; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 21·6 in a thousand. In greater London 2,225 deaths were registered, corresponding to an annual rate of 21 in a thousand of the population. In the "outer ring" 9 deaths from diphtheria; whooping-cough, 34; and small-pox, 1, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending February 25th in the sixteen principal town districts of Ireland was 31·2 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 10·3, and the highest in Dundalk, viz., 74·2 in a thousand. In Dublin 192 deaths were registered, including 2 from measles; whooping-cough, 4; scarlet fever, 8; and enteric fever, 3.

Scotland.—The deaths registered in eight principal towns during the week ending February 25th corresponded to an annual rate of 22·6 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 10·1, and the highest in Paisley, viz., 27·8 in a thousand. The aggregate number of deaths registered from all causes was 571, including 9 from measles; diphtheria, 7; scarlet fever, 3; whooping-cough, 32; fever, 1; and diarrhœa, 9.

Havana.—Two deaths from yellow-fever and 20 from small-pox are reported for the week ending March 3, 1888.

Contagious Pneumonia among French Swine.—Report by Consul Mason:

MARSEILLES, *February 4, 1888.*

During the month of June last there appeared among the swine in the vicinity of Marseilles a new and mysterious disease, which has since assumed the proportions of a general and serious epidemic. Its symptoms were coughing, diarrhœa, loss of appetite and strength, and in some cases the appearance of red blotches on the skin. A large majority of the hogs attacked died within a few days, and the farmers and swine-growers of this region, unable to resist the spread of the epidemic, attempted to escape it by selling off their hogs. On the 21st of September a large fair was held in Aubagne, a small city about ten miles from Marseilles, at which several thousand infected hogs were sold, nearly all of which have since died, and spread the epidemic throughout this department and as far north and westward as Lyons and Beziers. It is estimated that more than 30,000 swine died of the malady in this department during the last four months of 1887. The entry and sale in Marseilles of freshly killed pork from the surrounding country was prohibited in December by municipal decree, and until some effective remedy for the disease can be found, hog-raising is practically at an end in this part of France. When the epidemic became serious, two experts, MM. Conil and Chantemesse, from the Society of Biology, at Paris, were sent by the Minister of Agriculture to make a thorough study of the disease and report their conclusions to the government. Their observations are not yet concluded, but at a recent meeting of the municipal sanitary committee they presented an informal report of progress, from which, as well as from personal inquiry and observation, the following facts have been derived: They pronounce the disease "contagious pneumonia," and they believe it to be identical with the "Schweineseuche," described by Loeffler and Schutz, and the "swine plague," which has been investigated by Professor Salmon in the United States. At first they were inclined to believe it to be what has been hitherto known in France as the "rouget," but certain indications disprove this theory, and the disease is now recognized as a new and highly contagious malady, the origin of which no one has satisfactorily explained. There is no importation of swine to Marseilles from any country where this disease, or anything like it, has been previously known, and certainly no pork products, except lard, are admitted to France from the United States. Like the endemic cholera of the Mediterranean ports, it seems to have been of local origin. Thus far, as already indicated, no effective remedy for swine affected by this disease has been announced. It was soon noticed, however, that such animals as had been slightly attacked and recovered were thereby rendered impervious to further contagion. This naturally suggested the idea of vaccination with attenuated cultivations of the virus as a preventive, and experiments have been made in this direction so far as to show that rabbits, pigeons, and guinea-pigs die, almost without exception, when inoculated with the original virus at its full strength, but survive in most cases when the material used is a cultivation attenuated by successive cultivations in gelatin or juices of meat. The malady is extremely contagious, both by inhalation and absorption. If inhaled, the ulcers are found most numerous and malignant in the lungs; if the contagion be swallowed with food or drink, they appear in the stomach and intestines. A single diseased hog, unless promptly removed when the first symptoms appear, is sufficient to quickly contaminate not only an entire herd, but the premises in which they are kept. It is abundantly demonstrated that the germ of infection is a microbe or bacillus which generates rapidly and in myriads among the saliva, the fæcal matter, and other secretions of diseased animals. Experiments have shown that the microbe resists stubbornly several leading disinfectants, among which are sulphate of iron, chloride of zinc, lime-water, corrosive sublimate, and spirits of turpentine, and succumbs but slowly to sulphate of copper, oxalic acid, and pure alcohol. The only two chemicals which have been found to destroy it promptly and certainly are hydrochloric and phenic acids, and the most effective wash for contaminated sties and hog-yards is a solution of four parts of phenic acid and two parts of hydrochloric acid in one hundred parts of water. Desiccation seems to have but little effect upon this stubborn organism. A drop of virus from a diseased animal has been evaporated and the residuum kept absolutely dry for fifteen days, and then, upon being dissolved in meat-juice, has rapidly developed microbes of contagious pneumonia. The one other effective agency of destruction is heat. The germ is effectually destroyed by a temperature of 70° centigrade (158° F.), and it thus happens that the meat of a hog which had been affected by this disease is not necessarily deleterious, provided it has been thoroughly cooked, as all pork products should invariably be before being eaten. It is impossible to predict to what limits the present epidemic in southern France may extend before it can be checked. Thus far, the only remedy that has been even suggested is vaccination, and this has reached only the experimental stage. The vaccine has undoubtedly been found and applied successfully to several species of small animals, such as guinea-pigs and rabbits, but the conditions under which it can be safely applied to swine are yet to be demonstrated, since it appears that hogs, when even slightly contaminated by contact with the disease, may live indefinitely, but can not be fattened. Even a small degree of infection is sufficient to destroy their appetite and the power to assimilate food beyond the barest actual requirements of existence. Hitherto the principal effort has been to restrict the spread of the epidemic. Traffic in hogs has practically ceased in this part of France, and there seems to be but one method by which the farmers and pork-raisers whose premises have been infected can re-establish their business. This will be to slaughter or banish all the swine now in their yards and pens, then cleanse, air, and disinfect the premises thoroughly, and re-establish their stock with clean, healthy hogs, imported from localities sufficiently remote to warrant their freedom from contamination.

The foregoing account shows clearly that the disease is the same as that known here as "swine plague" or "hog cholera."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	February 25.	2,260,945	1,070	..	...	10	....	17	5	46
Glasgow	February 25.	545,678	272	..	....	...	....	....	2	3
Warsaw	February 18.	439,174	215	..	....	3	....	...	2	8
Calcutta	January 28.	433,219	227	16	....	....	....	....	....	....
Amsterdam	February 25.	389,916	217	..	....	....	....	1	....	2
Rome	January 14.	382,973	225	..	....	....	...	1	1	1
Rome	January 21.	382,973	245	..	....	6	....	6	1	5
Copenhagen	February 14.	300,000	171	..	...	....	....	....	5	5
Munich	February 11.	275,000	135	..	....	....	....	....	....	5
Edinburgh	February 18.	262,733	106	..	....	....	....	....	2	4
Palermo	February 26.	250,000	132	..	....	....	....	....	4	5
Bristol	February 25.	226,510	83	..	....	....	...	1	1	....
Genoa	February 18.	179,368	125	..	....	11	1	....	....	3
Genoa	February 25.	179,368	143	.	....	11	1	...	....	....
Leipsic	February 25.	170,000	71	..	....	....	....	...	....	8
Stuttgart	February 25.	125,510	51	..	....	....	....	....	....	2
Gibraltar	February 19.	23,631	7	..	..	....	....	1	....	....

UNITED STATES.

Gulf Quarantine.—Removal of Quarantine Station from Ship Island. Act approved March 5, 1888:

AN ACT to authorize the removal of the Quarantine Station from Ship Island, Miss.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury is hereby authorized to cause the removal of the National Quarantine Station, now located on Ship Island, in the Gulf of Mexico, to some other island in said Gulf, or in such pass in the Mississippi Delta as may be recommended by a board to be designated by him, and that the necessary quarantine buildings and appliances be established thereon; and that the sum of forty-five thousand dollars, or so much thereof as may be necessary, is hereby appropriated to carry out the purposes of this act.

San Francisco.—Small-pox.—One hundred and fifteen cases and 9 deaths are reported for the month of February, 1888.

SOUTHERN NOTES.

BY W. E. B. DAVIS, M. D., BIRMINGHAM, ALA.

The Inadequacy of the Law Regulating the Practice of Medicine in Alabama due to its System of County Boards of Medical Examiners.—Notwithstanding the fact that the profession of Alabama is more thoroughly organized than that of any other State in the South, and has been able to accomplish the enactment of every law it has recommended, there is not that protection from incompetency that exists in Virginia and North Carolina, and this lack of protection is due entirely to the multiplicity of its examining boards. The Medical Society of Alabama, with its branches, the county medical societies, thus forms a part of the machinery of the Government; it elects a State Board of Health, which is also the State Board of Medical Examiners, and the county societies elect county boards of health, which are also the county boards of medical examiners, and it can not be questioned that this system has much to commend it as a means of organizing the profession. But, as has been stated, its defect consists in constituting the county boards of health boards of examiners. This is very apparent when we consider that every individual proposing to practice in the State must be either a graduate of a reputable medical college and pass a creditable examination before the board of the county in which he expects to locate, or, if a non-graduate, pass an examination before the State board. At present there are some counties with no organized boards of examiners, and it is only necessary to locate in one of these and practice a few weeks when a certificate can be procured from the county officials that will admit one to practice in any portion of the State. Hence it is possible to have some admitted to the privileges of the profession without any examination whatever.

It is a fact familiar to all the profession of Alabama that a very large number of the county boards are not at all efficient, and that many applicants are admitted by these examiners who would be rejected by more efficient ones. Thus there is no uniformity in the requirements of the different counties. The standard of a county board may even be higher than that of the State board, and, as candidates rejected by the county boards have the privilege of appealing to the State board, much dissatisfaction must necessarily arise in those counties where applicants have been licensed by the State board after rejection by the county examiners, for such county boards will always be accused of having rejected the candidates either from selfish motives or from ignorance of the duties of the office. As most applicants are familiar with the defects of the law, and as the more thorough examinations can be so easily evaded, very little protection is afforded in those cases where it is most needed; for ignorant, unprincipled practitioners will always be ready to locate temporarily in counties where no societies have been organized, or, at least, in counties where the examinations are very defective. Numerous examples of such evasion could be cited did space permit.

To illustrate the want of uniformity in the application of the law, it is only necessary to refer to the last report of the State Board of Censors: Of the 64 examinations made by the county boards there were 12 rejections, and 5 of these by the Jefferson County board out of its 10 examinations. The 54 other examinations were made in about 30 counties. One county rejected one half of those who applied for certificates, and the other counties one eighth. Of three applicants who appealed from one county to the State board two were awarded diplomas.

Any legislation to regulate the practice of medicine should fix the minimum requirements for a certificate to practice, and its chief aim should be to place the administration of the law in capable hands. This can not be accomplished if it is intrusted to a multiplicity of examining faculties; for, as has been shown, there can be no uniformity or equality where examinations are conducted by examining boards of such different attainments. While some good has resulted from the present law, it is so defective that the State can never establish that high standard of medical acquirements to which the profession aspires until it is changed. "Every physician can appreciate," says Dr. Barker, "the good intention of this law, knowing as he does that charters for medical colleges can be so easily obtained from State legislatures, and that the profession alone can protect the public from ignorant, unprincipled practitioners, who not only swindle their victims but jeopardize health, and often sacrifice human life." The intention, as stated, is laudable, but with the county system of examiners the State does not rise above the standard of the poorest schools, and in the unorganized counties even this is not attained.

At the last annual session of the State society a resolution was introduced by Dr. H. N. Rosser recommending one examining board for the State, but, as this was opposed by the Board of Censors, it failed to reach the House. The Censors freely admit the charges against the county boards, but maintain that thoroughness of examination is not the only thing to be considered—nay, not even the principal thing. They contend that the chief aim of the association should be, and is, the organization and discipline of the medical profession throughout the State, and that the most potent of all the factors that they are able to invoke in the accomplishment of this object grows out of the fact that the county societies are intrusted with the administration of the law to regulate the practice of medicine. Without this system, they think, the majority of the county medical societies would "drop to pieces," and more than half of the existing societies would never have been organized at all. There are also other reasons which they think show that the county board system is incomparably superior to the system which has been advocated instead of it. "The service on the boards of examiners contributes somewhat to the elevation, professional and personal, of the examiners themselves; a good medical police is had all over the State to see that offenders are brought to justice, and that the law is enforced in the courts, and the flexibility of the system enables it to accommodate itself to the changing wants of the people." In the language of these gentlemen, "There are many sections of the State where practitioners of the highest culture and reputation would not find sufficient inducement to settle, and the people of these sections must have doctors." It is unnecessary to discuss their arguments, for they do not consider the proper aims of a scientific profession. What does organization amount to without medical acquirement? To say that the profession of Alabama is well organized and disciplined means nothing. It does not require ability or attainments in the members of an organization to be well disciplined and organized. We have abundant evidence of this in the many labor unions, etc., in this country. A few leaders of ability can influence the most perfect unions or organizations of men of comparatively no information whatever. State medical organization without corresponding professional improvement and elevation is deception to the people and a disgrace to a scientific and conscientious profession. Possibly the present system has assisted in enabling the profession to promote the enactment of so many laws of inestimable value to the State, but when the means to attain a high object is made the chief aim of any organization, that organization is laboring under a great misconception of duty, and has lost sight of the true reason for its existence. Think of *flexible medical examinations*, admitting to some counties incompetent men because men of the highest attainments could not be induced to settle in such localities! The very idea is preposterous! Look at Germany, Austria, and Russia. In those countries every physician must be thoroughly educated and well prepared before being admitted to practice, and, although there are districts in all of them where poverty and ignorance reign supreme, every individual has plenty of medical attention, and practice is in great demand. Think of Alabama, with only a million inhabitants and two thousand doctors (?), and you can readily see that her law has been *quite flexible*—sufficiently so already to have admitted enough doctors to meet the wants of the people for the next ten years without another accession. The trouble is that the profession is so crowded, and with incompetents at that, that capable men are unable to earn more than a mere sustenance. This is not as it should be, and the medical association of the State has it in its power to secure laws which would completely stop the ingress of such to our ranks.

With the existing law there are about sixty accessions to the profession each year, and more than half who enter it are undeserving of admission. In ten years the profession will be but little in advance of the present. Therefore the law should be changed for the following reasons: It can not be enforced in the unorganized counties; the boards can not be got together long enough to conduct examinations; local prejudice may cause unfairness in some cases; the law is so easily evaded by applying for a certificate in one county and practicing in another. Knowing these statements to be true, I believe that the law, instead of excluding incompetent practitioners, encourages ignorance and quackery by elevating ignorance and degrading intelligence to one common level. It is a deception and injustice, and a disgrace to an intelligent and conscientious profession, and to a confiding public a useless insult.

I learn from an announcement, just received from the secretary of the association, that at the next session, on the evening of the second day (April 11th), it is proposed that there shall be a general discussion of the ways and means best calculated to secure the successful administration of the law to regulate the practice of medicine and the health laws of the State. It is earnestly desired that at this meeting it be decided to abolish the county examining boards and that they be retained as health boards only, and that the State board be retained as at present, with the exception that it shall not be allowed to examine non-graduates. The board should have a paid secretary, who should reside near the center of the State, and he should conduct twelve or four examinations a year (monthly or quarterly examinations) and be required to devote one week each month or quarter to examining all who might apply for certificates. At the close of each examination the papers of each department should be forwarded by the secretary to the respective examiners. After the members of the board have marked the papers in their respective branches, the valuations should be returned to the secretary, when a correct estimate could be made of the candidates' examinations. This would give uniformity to the examinations, and all applicants would be submitted to the same test. If an applicant should fail on the first he should be allowed to reapply every six months until he was thoroughly satisfied. It should be insisted that a diploma be presented by the applicant, as the experience of all countries has demonstrated the necessity of examinations by the teaching faculties, and the wisdom of requiring their assent to a license to practice, as an examination by a board would not be at all reliable. Injustice would perhaps be done to some, while a readiness in reply which can be attained in a few weeks by some, without either solid acquirements or sound judgment, would often secure success. Examiners with no personal acquaintance with the mental characteristics, the habits of study, or the personal conduct of the candidate, could not possibly in all cases render a satisfactory decision. This is the opinion of the best medical men of the day, and was so expressed by Dr. Fordyce Barker before the New York Academy of Medicine. The law here recommended would allow the State board to examine only those who had diplomas from reputable medical faculties, and hence the qualifications of the candidates would have been passed upon by two impartial boards, the one a reputable teaching faculty, the other, composed of some of the most competent men of Alabama, who would be relieved from the reproach of having rejected candidates from selfish motives, etc., as examinations would be free from the local and personal character of those of the county boards.

It is to be hoped that the State association will further the grand work it has already accomplished by taking prompt and active steps in this matter.

Moral and Criminal Responsibilities.—Dr. Peter Bryce, superintendent of the Alabama Hospital for the Insane, recently read a very interesting paper on this subject at a medico-legal meeting in Birmingham. He began by affirming the intimate association of the science of mind with all such questions. He maintained that great advances had lately been made in the science of psychology, the most important of which was the dependence of mind upon body. Instead of mind being, as was long supposed, an independent entity thrust in some mysterious manner, at some indefinable time, upon the organism to control its actions through the medium of the nerves, it should be regarded as a creature of the organism, a phenomenon of the advancing nervous system. He further indicated the important part that the muscular and osseous systems had played in the generation of mind by their facilitation of definite and complex movements, repeated demonstrations having established the closest assimilation of ideas and motions. The inference was, therefore, unavoidable that mind, like digestion, was a function of the organism, and that when one's intellect was impaired, as when one's digestion was disordered, a special function was impeded by some disorder of the organism. He then alluded to the interesting fact that in the myriad diverse forms of animal life there should be as many different characters of mind as forms of body—the intellectual potencies and peculiarities of bodily construction. At this point he affirmed that mind in animals and in man differed only in degree. He contended that the most overwhelming proof of the fallacy of the old metaphysical idea of mind was found in the various degrees of intellectual potency observed in animals, and the rigid conformity of their intellect to their capacity for definite sensations and movements. He next adduced the interesting phenomena of heredity as still further evidence of the correctness of these views of mind, for it had been shown by countless experiments that intellectual and moral qualities were as capable of transmission as physical peculiarities. At this point he took occasion to inculcate the need of greater charity in our judgment of human conduct, many persons being no more deserving of reproach for their departure from the lines of strict propriety than a man with deformed legs for not walking with regular strides.

The well-known influence of climate on character he further indicated as confirming all that was contended for in reference to the dependence of mind on organism. The European and African, doubtless, having their origin in the same ancestry, had been made by climate and alien influences as different in their intellectual and moral as in their integumentary characteristics. The dependence of intellectual and moral traits upon physical peculiarities he further emphasized by those glowing but evanescent traits that were developed under the influence of alcohol and other narcotics or stimulants. Reference was also made to those radical changes of character that had not infrequently resulted from changes of life in women, or from blows on the head, or changes in the state of health. He reported the following from his own practice: A man of the highest intelligence, irreproachable character, and the kindest feelings was converted by a fall upon his head, fracturing his skull, into a very demon. He became deceitful, cruel, and vicious in the extreme, and had to be committed for safe-keeping to a hospital for the insane. He remained in this condition until relieved by an operation for pressure upon the brain, after which he almost instantaneously lost his immoral traits, and regained his former unexceptionable character. The doctor contended that on the phenomena of mind vast light had been shed by the evolution theory; that, in fact, without that theory an impenetrable darkness so shrouded the whole subject that it was not remarkable that the intervention of miracle had been habitually invoked to account for them. In the light of evolution every event was an effect of antecedent causes, and each antecedent cause was, in its turn, an effect of previous causes. The effect of such a conclusion upon many interesting questions of life, both public and private, were evident. Men were good or bad according as antecedents determine, and not as a capricious will-power might elect.

The will, continued Dr. Bryce, as one of the constituents of mind, either conformed to the law of orderly growth or development, or it was a haphazard phenomenon, acknowledging no antecedents, and bound to no consequents. In conclusion, he addressed himself specially to the members of the legal profession; declared that little difficulty would be found in adapting the principles just enunciated to the laws of the land, although it was inevitable that some decided change should supervene in our present criminal codes. A great change which would follow such statutory changes would be the creation of commissions competent to determine the term of confinement and treatment in each case. In other words, the statute should not prescribe the duration of the criminal's sequestration, but in very many cases leave it to this commission to shorten or lengthen the term, according to satisfactory evidence that the criminal might give of his reform, or the reverse. To carry out such statutory provisions, prisons and reformatories would be necessary in which the various classes of criminals might be so graded as to have about them only such characters as would not, at least, have a tendency to demoralize them, or pull them still lower down the easy descent of vice and crime. These views, the speaker affirmed, were the outcome of the scientific disclosures of the last few years, and, whether or not they were accepted, were so fortified by proofs of foundation in the laws of nature that the revolution to which they pointed, and which he had endeavored to champion, was destined to occur at a very early day; for never yet had ignorance or prejudice prevailed against positive demonstration of truth in societies whose education had made the great mass of the people competent to weigh and decide upon the evidence submitted.

ANSWERS TO CORRESPONDENTS.

No. 162.—The Medical Society of New Jersey is made up of delegates and honorary members. Delegates receive their appointment from the district societies, each of which is entitled to send three delegates at large and an additional delegate for every ten members. Practitioners of medicine residing anywhere in the United States may be admitted to honorary membership by ballot, provided they have been nominated by the Committee on Honorary Membership at a previous meeting. They can not exceed fifteen in number.

No. 163.—Circumcision is practiced by the Jews as a rite, and by some individuals for hygienic or prophylactic purposes. It has been thought to lessen the sensibility of the glans. Its general adoption would probably render masturbation less extensive among boys.

No. 164.—Your conception of the physiology of digestion in the fowl is quite correct, and it is not to be supposed that any preparation of its gizzard can act as a digestive ferment, like pepsin, for instance. Nevertheless, there is the highest testimony to the value of ingluvin (which, we take it, is the preparation you mean) as an aid to digestion, and especially in controlling the vomiting of pregnancy. Recent investigations, says Dr. Bartholow, have shown that its remedial action is owing to a peculiar bitter principle, and not to a ferment.

No. 165.—1. As-et-an'il-id. 2. The product differs from most others of its class in containing vegetable matter, which may be of advantage in certain cases. We do not esteem it very highly, but yet we do not believe it to be a worthless preparation. 3. In the statement "alcohol dissolves the diphtheritic exudation," the word *dissolves* must have been used in a figurative sense; taken literally, the statement certainly is not true.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

AN ABSTRACT OF A LECTURE ON THE SIGNIFICANCE AND VALUE OF PUPILLARY PHENOMENA IN NERVOUS DISEASE.

Delivered at the New York Post-graduate Medical School and Hospital, November 21, 1887.

By WILLIAM M. LESZYNSKY, M. D.,
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(Reported by LOUISE FISKE-BRYSON, M. D.)

PUPILLARY phenomena in nervous troubles possess a distinct value as corroborative evidence. In certain affections they appear early and with decided regularity. Taken alone, and separated from other signs, it would be unwarrantable to consider them indicative of any pathological condition of the nervous system. Yet in connection with other symptoms they are valuable aids to diagnosis. Their importance lies in the fact that an intelligent comprehension of their real significance enables us in many instances to distinguish between organic and functional nervous disease.

A word about the nerve and blood supply to the iris. "The pupil may be considered to be under the dominion of two antagonistic mechanisms; one a contracting mechanism, reflex in nature, the third nerve serving as the efferent, and the optic as the afferent tract; the other a dilating mechanism, apparently tonic in nature, but subject to augmentation from various causes, and of this the cervical sympathetic is the efferent channel. Hence, when the optic or the third nerve is divided, not only does contraction of the pupil cease to be manifest, but active dilatation occurs on account of the tonic dilating influence of the sympathetic being left free to work. When, on the other hand, the sympathetic is divided this tonic influence falls away and contraction results. When the optic or the third nerve is stimulated, the dilating effect of the sympathetic is overcome and contraction results; and when the sympathetic is stimulated, any contracting influence of the third nerve which may be present is overcome and dilatation ensues." (M. Foster.)

The blood-supply is remotely from the internal carotid artery, and immediately from the ophthalmic and its branches. The circulation in the pia mater has the same remote source, yet only in an anastomotic sense can it be considered the same as that of the iris. Abnormities of cerebral circulation may exist without evidence of such disturbance in the eye. On the other hand, changes in the pupil may point to pathological conditions of the brain or spinal cord. Relatively, eye-symptoms offer confirmation or negation of previous provisional diagnoses.

All local diseases of the eye must be excluded before we think of some central nervous lesion or functional disorder to account for any abnormal condition that may be present. The practitioner should familiarize himself with the preliminary methods of examination for acuteness of vision and errors of refraction. A visual power of twenty twentieths excludes but one condition only—myopia. Optic neuritis or other trouble may be present. The next step is to examine the pupils carefully. They should be mobile and of the same size and shape. Place the patient in a position facing a window. Do not allow the sun to shine upon his face. Never attempt an examination of the pupils while the patient sits or stands with his back to the light, as under such circumstances the pupils are usually dilated. It is unadvisable to examine the pupils directly in front of a gas flame. The patient is likely to and generally does "fix" upon the flame, thereby causing contraction of the pupils in accommodation, which may mislead the examiner. Direct him to gaze upon some object at least twenty feet distant in order to relax accommodation. Sufficient knowledge of ophthalmology to recognize or exclude local diseases of the eye that may affect the pupil is an essential feature in the examination we are now considering. The following method of observation should be systematically adhered to:

1. As to the size of the pupils.
2. As to their shape.
3. As to their equality.
4. As to their mobility.

Contracted pupils are generally seen when the eyes are exposed to a bright light and in persons over fifty years of age. The existence of myosis in any one under fifty years of age is almost always pathological. Contracted pupils are found in cerebral hyperæmia or congestion, and in the early stages of meningitis. They may also be due to hypermetropia or to the effect of some drug, such as eserine, morphine, pilocarpine, etc. Irritation of the third nerve at its nucleus or in any part of its course, or paralysis of the sympathetic or its branches, produces contraction of the pupil on the same side as the lesion. Myosis is frequently seen in cases of locomotor ataxia and in paretic dementia, and occasionally in cervical myelitis.

Dilated pupils exist as a normal condition in darkness or subdued light. Unless due to local disease of the eye, their presence in an old person is always pathological, and may indicate some disturbance in the nervous system. In children the pupils are often dilated, as well as in grown persons of exaggerated reflex irritability. It is frequently an expression of increased excitability in cases of "nervousness," hysteria, etc. Mydriasis may result from the effect of drugs—such as atropine, duboisine, hyoscyamine, etc. In high degrees of myopia, the pupils are usually found dilated. This condition may also be due to cerebral or general anæmia. Paralysis of the third nerve, or irritation of the cervical sympathetic, produces dilatation of the pupil on the same side as the lesion. Dilatation of the pupils takes place during epileptic coma, in amaurosis, and in high grades of optic neuritis. It is also a manifestation of excessive intracranial pressure.

The *shape* of the pupils may vary, being distinctly different in each eye at times, or both may be alike, yet irregular. Sometimes one is round and the other pear-shaped, or triangular, or somewhat vertical or horizontal. An irregular pupil may result from the adhesive bands of a former iritis. The condition known as coloboma may be congenital, or acquired through surgery. It is a deformity in which the symmetry of the iris is destroyed by an elongated gap or cleft. Irregularity of the pupil may occasionally be observed in cases of paretic dementia without a pre-existing iritis. *Unequal pupils* never occur in health, but are observed where there is marked difference in the degree of refraction in the two eyes. They are present in paretic dementia, and, if not found at one examination, will be discovered subsequently. Unless the inequality is pronounced, it is frequently difficult to determine whether one pupil should be considered dilated or the other contracted. Unilateral dilatation may be due to some local disease of the eye; to instillation of atropine or other mydriatic; to paralysis of the motor oculi, or to irritation of the cervical sympathetic on the same side; or to blindness on the affected side. Unilateral myosis may be due to an existing or a former iritis; to irritation of the third nerve, or paralysis of the sympathetic on the same side; or to the instillation of drugs. Either phenomenon may be present during an attack of migraine.

The *mobility* of the pupils should next be considered. Physiological pupillary reactions are the following:

1. Contraction to light, or direct reflex action.
2. Consensual contraction, or indirect reflex action.
3. Associated contraction in accommodation.

1. Contraction of the pupils to light, or direct reflex action, is thus investigated: Instruct the patient to gaze upon some large object at least twenty feet distant, and to keep both eyes open. The eyes are then covered or shaded. In a few moments one is suddenly uncovered and exposed to light, when, in the normal state, the pupil (which always dilates in darkness or subdued light) immediately contracts. The other eye is then tested in the same manner.

2. For consensual contraction, or indirect reflex action, the examination is conducted in the same manner as before, only both eyes are at first left uncovered. One eye is then covered, and in a moment or two is suddenly exposed, when it will be noticed that a simultaneous contraction occurs in the opposite pupil. This consensual pupillary reaction to light is owing to bilateral association of the reflex mechanism.

3. Associated contraction to accommodation is obtained with the patient in the same position. Direct him to look at some small object held within one foot of the eyes, when, in the normal state, synchronous contraction of both pupils will take place. In health the pupils dilate upon pinching, scratching, or irritating the skin over the neck or elsewhere. This is supposed to be due to excitation of the sympathetic nerve-fibers in connection with the so-called cilio-spinal center. Abnormal conditions of the pupils are not difficult to discover if their physiological action is thoroughly understood and constantly borne in mind. Reflex action to light is lost when the eyes are blind from disease of the optic nerves or retinæ. If only one eye is blind, the direct action of its pupil will be lost, but (unless there is disease of its third nerve also) the indirect or consensual action will be preserved, or may be much greater than in health. Loss of reaction to light during the epileptic paroxysm is a positive diagnostic symptom in excluding simulation.

In the condition known as the "Argyll-Robertson pupil" there is abolition of reflex action upon exposure to light, but the associated pupillary contraction in accommodation is preserved. This symptom is occasionally accompanied by myosis or inequality of the pupils, and is a valuable aid to diagnosis. It occurs in locomotor ataxia, in paretic dementia, and in some cases of disseminated sclerosis. The presence of the Argyll-Robertson pupil in conjunction with the absence of knee-jerk may be considered presumptive evidence of degeneration affecting the posterior columns of the spinal cord.

In this connection it is interesting to note that in eyes that are totally blind the pupils are generally found dilated, and fail to react upon sudden exposure to light; but at times associated pupillary contraction occurs when the patient is instructed to make an effort and act as though he were looking at an object within a few inches—by encouraging him, as it were, to indulge in a (somewhat modified) visual hallucination.

In the condition known as cycloplegia, or paralysis of the ciliary muscle—an occasional complication or sequel of diphtheria—the contraction of the pupils to light is preserved; but, as the sufferer has become temporarily presbyopic (if the expression may be allowed) and the mechanism controlling accommodation is interfered with, the pupils fail to react for the near point. This, you perceive, is the reverse of the Argyll-Robertson pupil. When the pupil is dilated by atropine, it fails to react either to light or in accommodation, as both the ciliary muscle and the fibers of the motor oculi supplying the iris are paralyzed. This failure to respond to light is from peripheral causes.

It has been my earnest endeavor in this lecture to impress upon you, and outline for your benefit, as concisely as is consistent with lucidity, the advantages of a methodical examination of the pupils and the significance of any abnormities they may present. The study of this too often neglected field of investigation will amply repay you for all the time, thought, and care bestowed upon it. It is one of the clinical features of many otherwise obscure conditions. As before stated, pupillary phenomena serve as corroborative evidence, affording confirmation or negation of a provisional diagnosis. I have purposely refrained from referring at length to the various local diseases of the eye which influence the pupil. This subject belongs to the broad domain of ophthalmology.

Cauterization in Malignant Pustule.—According to the "Lancet," "Dr. Martin Ayuso considers that, for the destruction of a virus such as that existing in malignant pustule, the actual cautery is far inferior to chemical caustics, as these penetrate more deeply. The plan he adopts is first to draw a line with ink on the surface, marking out the boundary of the œdema; then to make two or three crucial incisions, and in these to place pledgets of lint soaked in nitric acid. Pressure is then made over the whole by means of the foot of a wine-glass, or in some other convenient manner, for ten or fifteen minutes, so as to express the acid and cause it to act on the tissues. The lint is then removed and a dry dressing applied. If at the end of six or eight hours the œdema has extended beyond the marked boundary, a more extensive and more energetic application of the caustic is required."

Original Communications.

DIABETIC AFFECTIONS OF THE EYE.[*]

By WILLIAM OLIVER MOORE, M. D.,

PROFESSOR OF DISEASES OF THE EYE AND EAR IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

> "What says the doctor to my water?
> "He said, sir, the water itself was a good, healthy water, but for the party that owed it, he might have more diseases than he knew for."—KING HENRY IV, PART II.

THE only excuse I can offer for presenting this subject to your attention is, that during the past ten years I have seen an unusually large number of diabetic affections of the eye as compared with the number of such cases reported in the practice of older physicians. This is to be accounted for by my especial interest in this class of patients and my solicitation of diabetics for ophthalmoscopic examination from general practice, thus having sought for the cases before they sought the ophthalmic physician. What I may say will contain nothing new, but will be rather a report of my own cases, together with a *résumé* of the subject as it at present is understood, with the hope uppermost that a full discussion will be evoked and some interesting facts brought out that have hitherto been latent.

Celsus was probably the first to clearly describe diabetes, and Galen (131 to 210 A. D.) to first call it by that name.

In 1674 Willis first associated the presence of sugar with the disease, discovered by the sweet taste of the urine. Other observers succeeded in separating the sugar, and Rollo in 1787 began the dietetic treatment by withholding vegetable food.

It is not a rare disease, is more common now than formerly. This fact is probably due to the frequent and more accurate examination of the urine. In the United States census for 1880 there are reported 1,443 deaths from diabetes, or 0·19 per cent. of deaths from all causes, against 0·17 per cent. in 1870.

Report of Deaths from Diabetes in New York City. From the Records of the Board of Health.[†]

	DEATHS FROM DIABETES.		DEATHS FROM ALL CAUSES.	
	Total.	Over 15 years	Total.	Over 15 years
1878	42	41	27,008	13,174
1879	37	36	28,342	14,075
1880	44	43	31,937	15,684
1881	43	43	38,624	18,250
1882	46	43	37,924	18,264
1883	68	64	34,011	18,451
1884	68	67	35,034	18,184
1885	63	62	35,682	18,787
1886	82	78	37,351	19,566
1887	105	104	38,933	20,303

Total deaths in ten years from diabetes, 598.

Total deaths from all diseases in ten years, 344,846, or 1 diabetic in every 577 deaths.

In 1867–'69 the ratio of deaths from diabetes to the total number of deaths was 1 to 1,379.

In 1867–'69 there were 49 deaths from diabetes.

In 1877–'79 there were 123, an increase of 74, which is out of proportion to the population increase.

It is more common between thirty and forty years of age, but does occur, as seen, in early life, although the older writers did not so consider. Prout states that of 700 cases of diabetes, he had met with "but one instance of it in a child five years old, and only twelve in young persons between the ages of eight and twenty." Hanner has reported the case of an infant twelve months old. G. M. Smith (1), M. D., reports one twenty-three months old, and W. H. Deane (2), M. D., of Blanford, Mass., one, a female, one year and three weeks old. Of cases treated at the New York Post-graduate School and Hospital, there were only three in the first 10,000. In the Vienna Polyclinic Romberg found the same ratio to exist. I am quite sure that the disease is more prevalent in private practice than is usually conceded, and that the reason we do not find records of such in hospitals and dispensaries is on account of the carelessness of examinations and the improper signing of death certificates. That there is also a great disproportion between the diabetic affections of the eye seen in private and those seen in hospital practice, owing to the loose way of making diagnoses, I make this sweeping statement from my recent efforts to obtain evidence as to this point in the principal ophthalmic hospitals of this country. The statistics of these institutions are utterly useless.

Hirschberg (3) remarks upon the much greater frequency of diabetes in private than hospital ophthalmic practice, and reports, of 1,638 private patients, 17 suffering from diabetes, while of 10,000 at his clinic 3 only had sugar in the urine. During the past ten years I have examined 97 diabetic subjects, and of this number 21 had ocular affections.

Amblyopia (without ophthalmoscopic change)	4
Cataract	4
Retinitis (glycosuric)	5
Hæmorrhages and floating bodies in vitreous	4
Paralysis of accommodation	3
Iritis (diabetic)	1
Total	21

Dufresne (14), out of 162 diabetics, had 20 with various ocular affections.

In 1798 Rollo first called attention to eye trouble in diabetes, although Blankaard in 1688 mentioned a case of blindness from this disease, in which, however, it was subsequently found that both the diabetes and the blindness were due to a tumor of the brain. Dr. Prout and Mr. France long since called attention to this association. The most common ocular symptoms usually are, first, affections of the muscular system, paralysis or loss of accommodation, and paralysis of the extrinsic muscles of the eye, usually the abducens. Then the vascular system becomes affected and we observe hæmorrhages into the vitreous, also floating bodies, the result of improper nutrition of that body. As a result of the serious changes in the vascular system, retinal hæmorrhages take place, and at the same time we find them in the vitreous usually associated. Cataract and amblyopia are found in the later stages of the disease. Iritis and keratitis are rarely seen, but have been very admirably described by Leber (16), Schirmer (17), and Wiesinger (19). It is quite natural that the first ocular symptoms noticed occur as the result of general muscular weakness. I have seen in many diabetics a temporary loss of accommodation, which would last during a few days to a few weeks, when more than the usual amount of sugar was being voided from the system, which would give way on a proper treatment being adopted.

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[*] Read before the Section in Ophthalmology and Otology of the New York Academy of Medicine, February 20, 1888.

[†] I am indebted for the foregoing to Dr. Roger S. Tracy, Register of Vital Statistics.

The cases where the accommodative disturbance was but transitory I have not counted, and will relate only the three where it remained permanent.

CASE I.—Male, aged thirty, lawyer, first consulted me in 1879, complaining of difficulty in reading. On examination, V. = $\frac{20}{20}$, em. No ophthalmoscopic changes; pupils normal; accommodation, however, faulty, so that newspaper type could be seen only at eighteen inches. Convex glasses were ordered for reading (+ $\frac{1}{36}$) and near vision was restored. This patient subsequently had opacities in the vitreous, and died eighteen months later from phthisis.

CASE II.—Female, aged thirty-six, has had sugar in the urine for the past two years. Has never had any trouble in the eyes until three months since, when she had to put the book farther away than usual. The normal range of vision was restored only by the wearing of convex glasses. The fundus and media were normal. Any slight effort caused accommodative asthenopia. The refraction was hyperopic. This patient had V. = $\frac{20}{20}$ for distance, and after prescribing glasses was lost sight of.

CASE III.—Male, aged twenty-nine, single, butcher, has had sugar in urine for the past six months, passing nine pints with ten grains of sugar to the ounce; specific gravity, 1·040. General muscular weakness; first noticed failure of sight in reading two weeks before my examination, October 15, 1886. V. = $\frac{20}{20}$, hyperopia = $\frac{1}{24}$. This patient was a friend, and I had previously examined the refraction before any diabetic symptoms had made their appearance, when emmetropia was present. Since the diabetes the hyperopia and paresis of accommodation have appeared. With the decrease in the sugar in the urine the hyperopia and accommodation also diminished. This change in the refraction of the eye is due to the change in the specific gravity of the blood. Convex glasses gave relief to this patient. He died of carbuncle of the back, March 3, 1887.

Next to failure of accommodation, the muscular system shows its weakness in the paresis of the abducens (or sixth nerve). I have never seen this affection as a result of diabetes, or, if so seen, it has not been recoginzed. Gutmann (20), in 1883, reports a case occurring in the person of a physician, aged fifty-three, thought to be suffering from tabes, but who was found to have diabetes. He was seen by Hirschberg, who found paralysis of the right abducens, with normal pupillary reaction and accommodation. The paralysis of the abducens was complete; the patient retired to Carlsbad, and after a sojourn of two months the sugar diminished and finally disappeared, and with it the diplopia produced by the affected muscle. The sixth nerve taking its deep origin from the floor of the fourth ventricle, the portion of the brain usually affected in diabetes, is supposed to be the reason why this particular muscle is paralyzed, as the other ocular muscles get their innervation from other parts more remote from this region.

Iritis and keratitis from diabetes have been noticed, and Leber and Wiesinger in 1885 report such cases, most of which occurred in the Göttingen Clinic.

In 1857 von Leudet, in the "Gazette médicale," relates the case of a female diabetic, aged thirty-two, with keratitis of the left eye; this patient, however, had paralysis of the third and fifth nerve of the same side, and at the autopsy a tumor, syphilitic in character, was found in the brain, so that this case was not diabetic, but neuro-paralytic in origin. In 1830 Himby speaks of keratitis in connection with diabetes, but the cases are not clearly defined. Panas (21), Galezowski (22), Bellouard, Coundouris, and others have reported cases of diabetic keratitis, and in most every case it has been of the purulent form, and the inflammation of a very passive character. One of Galezowski's cases was not diabetic, but rather due to the cerebral tumor which caused the diabetes; the two other cases reported by him were, without doubt, due to the general loss of nutrition produced by the diabetes. Most of the cases reported terminated in complete leucoma, and some in leucoma adhærens.

From what literature I have had access to, it would seem that keratitis from diabetes alone is a rare affection.

Iritis seems to be more common.

The first case reported, so far as I can learn, was in 1863, by Marchal de Calvi (23), that of a female diabetic, aged fifty, who had an irido-chorioiditis, and died shortly after from the general affection. In 1868, at the American Ophthalmological Society, Dr. H. D. Noyes (24) reported a case of retinitis hæmorrhagica occurring in a diabetic woman, aged sixty, who had had, some months previous to coming under his observation, double iritis, the posterior synechiæ showing this at the time of the examination for the retinitis. This case is reported by Noyes for the intraocular affection, and only incidentally are the results of the iritis mentioned, he evidently not at that time considering the iritis due to diabetes. It, however, belongs to that class.

Wickersheimer (25), in 1874, reports a patient, male, aged thirty-seven, with irido-chorioiditis.

Galezowski, 1879 and 1883, relates the case of a male, aged sixty, with iritis in the left eye and synechiæ in both. For two years the right eye had been the seat of iritis, he having been a diabetic since 1866. The left eye in three months improved.

Aladie, in the same year, reports a similar case.

Umman (26), 1881, reports the case of a priest, sixty-nine years old, with purulent iritis. Coundouris reports also a case of a male of a diabetic family, having iritis. Leber reports nine cases of iritis, with full and complete histories.

I have seen only one case of iritis in a diabetic, and it occurred only two months before the death of the patient.

Case IV.—Male, aged thirty-five, laborer, for two years has lost flesh and grown weaker; March 1, 1885, passing seven pints of urine daily, and eleven grains of sugar to the ounce. Has never had any trouble with his eyes; two weeks before seeking advice first noticed cloudiness of vision in R. E., followed in six days by failure of vision in the L. E. When seen by me the R. E. had V.=$\frac{20}{40}$, L.=$\frac{20}{30}$. Right iris inflamed and one or two small synechiæ showing aqueous cloudy and small amount of hypopyon, slight injection of the eyeball, and not much pain. L. E., pupil clear, though slowly responding to light; circumcorneal injection, slight pain, and no fear of light. The ophthalmoscope shows media clear in the eye. Four days later each eye has hypopyon and more marked signs of iritis. The cornea of the R. E. is slightly cloudy in the outer quadrant. A careful diet was prescribed, and the usual local measures for iritis were adopted. The patient recovered with a few adhesions remaining in the R. E. and some in the L. E. after an inflammation of six weeks' duration. The cornea remained cloudy till the time of death.

I have, in a number of diabetics, noticed a want of clearness in the vitreous where no opacity could really be determined, which would vary with the excretion of the sugar in the urine, and I suppose is to be explained by the varying conditions of the blood in these cases.

I will, however, only record cases where an actual change could be distinctly seen.

Case V.—*Floating Bodies in the Vitreous and Opacities in the Lens* in a woman aged fifty, Mrs. C. This patient first showed the signs of diabetes four years before. About six months before coming under the writer's notice she complained of dimness of vision, with "specks before her eyes." These symptoms gradually increased, and when seen by me, 1884, she had vision=$\frac{20}{40}$ each eye, pupils normal, field of vision normal; the ophthalmoscope showed very many floating bodies in the vitreous, and some small fresh hæmorrhages; the appearance was about alike in each eye; the retina and optic nerve seemed normal. The lens showed a few striæ in the peripheral portions. At this time the patient could read with correcting glasses for a short time only. Much sugar was being voided. Whenever the quantity of sugar diminished in the urine the vision improved. During the remainder of her life the eyes gave annoyance, and on two occasions—for a period of five weeks, during which time the diabetic symptoms were more pronounced than usual—vision was so bad that reading could not be indulged in. On these two occasions the opacity of the lens was much increased, and the lens, in fact, generally cloudy. On the disappearance of the severe diabetic symptoms the lens gradually cleared, the floating bodies in the vitreous remaining, but the vision improving so that she could read for a short time.

This case would seem to be one like that reported by Nettleship, where cataract disappeared on the subsidence of the severe diabetic symptoms.

The patient died in diabetic coma in December, 1887, with no increase in the opacity of lenses or vitreous. The patient was the wife of a physician of this city, and was very carefully treated.

Case VI. *Floating Bodies in the Vitreous, and a Small Opacity in the Right Lens.*—W. H. R., male, aged twenty-nine, seen by me in January, 1888. V.=$\frac{15}{30}$, Em. Seen by Dr. Satterthwaite. Reads Jaeger No. 3 with + $\frac{1}{40}$ from 8 to 18 inches. Has floating bodies very small and fine in vitreous of each eye, and opacity of the right lens, outer and lower quadrant. Has had diabetes for past year; has become emaciated and otherwise shown marked debility. Is an artist and can do work only for a short while at a time. This patient is still under observation.

Case VII.—Female, aged forty-seven, married, has had failing vision and "spots before her eyes" for the past eight months, has emaciated during the past year, and has passed large quantities of urine with a specific gravity of 1·040 to 1·045, containing sugar. Examination of eyes showed V.=$\frac{20}{50}$ each; ophthalmoscopic picture showed lens clear, but the vitreous filled with numerous fine floating bodies and ten small fresh hæmorrhages. The retina and optic nerve were normal. Each vitreous had a similar appearance except the hæmorrhages. This patient had recurring hæmorrhages until her death, January 17, 1886, from diabetic coma. At no time were there hæmorrhages into the retina.

Case VIII.—Male, aged thirty-eight, for two years before coming under observation had had diabetes, passing 8 pints of urine daily, with 20 grains of sugar to the ounce. When first seen, March, 1885, marked emaciation was noticed, with much muscular weakness. R. V.=$\frac{20}{70}$, L. V.=$\frac{20}{40}$. Ophthalmoscopic examination showed many floating bodies in the vitreous, and several small hæmorrhages. The fundus was normal. This patient, under careful and systematic treatment, improved, so that only 10 grains of sugar to the ounce was voided, and with this improvement the vision also increased. The patient, however, died soon after December, 1885, in an attack of pneumonia.

Cataract.—Opacity of the crystalline lens has from very early times been considered as one of the most common affections of the eye in diabetes mellitus, and it is only recently that the text-books speak of other diabetic affections of the visual apparatus.

According to Roberts, it occurs once in 45; according to Bouchardat, once in 38 diabetics; while Griesinger, out of 225, found cataract to exist in 20. In the St. George's Hospital it occurred once in 28 cases; Frerichs found 19 out of 400; and Graefe asserts that he has found them present in one quarter of all diabetics. In 858 diabetics collected from various sources already reported, together with my own, I find that diabetic cataract occurs once in every 17 whose glycogenic function is disturbed. In regard to the frequency of diabetic cataract to other forms of lenticular opacity it is difficult to say, as in the various hospitals the diagnosis is not accurately made, the special kind being rarely recorded—*e. g.*, of 8,933 cases of soft and hard cataract, non-traumatic and not congenital, recorded in the principal eye hospitals of New York, Brooklyn, Philadelphia, Boston, and Baltimore, only 4 are recorded as of diabetic origin, or 1 diabetic cataract in every 2,223 opacities of the lens. I am quite sure that this ratio is far too small. Badal, out of 20,000 patients with eye diseases, found 52 with diabetic affections of the eye, and of the latter number 13 were cataract.

It occurs in advanced cases, yet it also happens that attention is first directed to the diabetes by the disturbance of vision, more especially by the rapid formation of the cataract. As a rule, both eyes are attacked, though the maturing is not usually equal.

The origin of cataract in diabetes was formerly attributed to the withdrawal of water, from the experiments made by Kunde in 1856, who produced an opacity of the lens in frogs by desiccation or the introduction of substances having a strong affinity for water, such as salt and sugar under the skin; these experiments were afterward confirmed by Weir Mitchell and others.

Von Graefe, on the contrary, pointed out that such lenses (diabetic) did not, like those of frogs, lose their opacity by being laid in water, and that they did not, like the latter, show any formation of vacuoles in their interior. The non-appearance of cataract in diabetes insipidus also tells against its origin in mere deprivation of water. In view of the fact that several cases of spontaneous disappearance of cataract on the improvement of the diabetic symptoms and the decrease in the sugar voided, as reported by Seegen, Nettleship, and others, and as seen in Case V of our series, it would seem more probable that the abnormal constitution of the blood, its saccharinity, as well as that of the other fluids, favored the formation of cataract. Sugar has been detected in the lens and in the aqueous and vitreous humors, as shown by Liebreich, Knapp, and Lohmeyer. In my own practice I have seen four diabetic cataracts, or 1 in 14 of the diabetics examined.

Case IX.—Male, aged forty-six, laborer, came to the New York Eye and Ear Infirmary, March 18, 1881, complaining of failure of vision in each eye, more marked in the left—R.=$\frac{20}{200}$, L.=$\frac{5}{200}$; ophthalmoscope showed a cataract in each, of a soft variety and progressive in character; fundus normal, so far as could be seen. This failure of vision came on three months before coming under observation, and has rapidly increased. Examination of the urine by Fehling's test gave evidences of sugar. Patient voiding eight pints of urine daily. The patient was put on antidiabetic diet, and the amount of the sugar diminished. The vision, however, gradually decreased, and perception of light only remained. After three months' careful treatment for the constitutional disease, the lens of the L. E. was extracted, and, save a mild form of iritis, no serious difficulty was experienced in the healing process. The patient was operated on at his home, and lived two years after the operation, dying of pneumonia on December 28, 1883.

Case X.—Female, aged forty-eight, widow, sewing-woman. First noticed failure of vision in January, 1883, and three months previously had noticed an increase in the quantity of urine voided. The increase in urine came on shortly after a severe sorrow, since which time she has lost weight and become very melancholy. Examination revealed double soft cataract, R. V. =$\frac{20}{100}$, L. V.=$\frac{20}{50}$. Fundus normal; antidiabetic treatment was directed, and rigidly adhered to for two months, when the quantity of sugar in the urine diminished, and with it a general improvement in the patient's physical and mental condition. The eyes, tested again at this time, showed R. V.=$\frac{20}{50}$, L. V.=$\frac{20}{40}$. The patient, becoming tired of the prescribed method of diet and treatment, went back to the former ways of living, and four months later the vision was as when first examined. Shortly after this the patient went to a distant Western town, and I have not since learned of the result.

Case XI.—Male, aged fifty-three. First seen by me at Burlington, Vt., in May, 1886. Previous to April, 1885, his health had been very good, but about that time he was affected with a great thirst, passed large quantities of urine, and gradually lost strength and flesh. When first seen by me he had large quantities of sugar in the urine, which had a specific gravity of 1·035. Failure of vision rapidly supervened, and, when examined, cataract of a bluish-white luster was observed in each eye, though more marked in the right. The fundus was normal. R. V.=$\frac{20}{100}$, L. V.=$\frac{20}{70}$. Constitutional treatment was prescribed and the patient advised to report in a few months. The patient, however, did not report, and after a lapse of eight months I learned, by inquiry, that the patient had died of exhaustion on December 14, 1886, the vision being so that he had only perception of light.

Case XII.—Male, aged sixty-one, merchant, seen in my private practice, April 18, 1885, with the history of failing vision for the past four months, associated with increase in the quantity of urine passed, containing much sugar. Specific gravity 1·040. No gout or rheumatism, or anything of importance in the family history. Examination of the eyes revealed in R. E. incipient cataract, with striae in many places, having the usual appearance of senile cataract; in the L. E. the lens looked more like the soft variety, and was more opalescent. The fundus was normal—R. V.=$\frac{20}{70}$, L. V.=$\frac{20}{50}$. This patient was placed on a careful diet, and iodide of potassium prescribed. This method of treatment was kept up for seven months faithfully, and with the result of improving very much the general condition, and with some effect on the opacities in the lenses. One year after the first examination the vision was, R.=$\frac{20}{100}$, L.=$\frac{20}{70}$.

The patient died of diabetic coma three years after the first appearance of the general disease without an operation for the cataract.

Besides these four cases seen by me, I know of one in the practice of Dr. E. G. Loring where he extracted a cataract in a diabetic subject with very excellent results and without any reaction; also of one case in the practice of Dr. Thomas R. Pooley.

We are to make a distinction between cataract occurring in diabetic subjects from ordinary senile changes and those coming from the loss of nutrition produced by the disturbance of the glycogenic function. For we may, I think, extract with freedom those lenses occurring in old people having sugar in the urine, whereas in the young diabetic we may have serious inflammation and necrosis of the cornea following the operations for the removal of the cataract. I should not hesitate to operate upon any case of cataract in a diabetic after a few weeks' treatment of the general disease by proper remedies, and think that the poor results previously reported were due to the infection of the parts, the lowered vitality having less power to resist the germs, and that if proper antiseptics had been employed better results would have been obtained.

The spontaneous disappearance of cataract as above mentioned gives us a point in the treatment to by all means try and diminish the quantity of urine voided, and especially to look for syphilis as a cause of the diabetes, and when it is found, iodide of potassium will be found to have most excellent effects. The use of Carlsbad waters is said to have caused diabetic cataract to disappear or to greatly diminish the opacity.

Diabetic Retinitis.—We next come to the deep-seated affections of the eye, in which the long-continued derangement of the glycogenic function causes changes in the vascular system generally, and when hæmorrhages are prone to occur in any part of the body, as the brain, retina, or spleen. According to Artigalas (30), whatever the symptoms associated with retinal hæmorrhages, it is always dependent upon the fibrous degeneration of the arteries, and that if the degenerative process continues, cerebral hæmorrhage is very apt to follow.

Mauthner in 1868, in his work on ophthalmoscopy, says: Eduard Jaeger (28) found retinitis in a person with diabetes mellitus; others have since then declared it possible (Nagel, Virchow), and by Martin and Galezowski it is positively asserted. Jaeger's case was that of a male, aged twenty-two. No record is given of the quantity of the urine, or sugar in it. Bouchut (29), Desmarres, Martin, and others report similar cases, and seem to be unable to distinguish it from albuminuric retinitis.

Noyes, at the American Ophthalmological Society in 1868, reports the case of a woman, aged sixty, diabetic for several years, and who in the previous year had double iritis, resulting in posterior synechia. When seen by the reporter, R. V. = $\frac{20}{40}$, L. = $\frac{20}{60}$. In the retina of each were found specks like fatty degeneration, with a few hæmorrhages. In the right eye the vitreous was noticed to be hazy. He says the appearances are absolutely identical with what he has often seen in cases of chronic renal disease, and the case was at first so considered. Minute and careful records of the urine passed and tested were kept, and sugar only without albumin discovered. In concluding the history of the case he says: "Pure glycosuria is capable of causing retinitis, and that the ophthalmoscopic appearances can not be distinguished from those which belong to albuminuric retinitis."

I am of the opinion that retinitis occurring in diabetes before the kidneys are diseased can be diagnosticated as such, and that it has distinctive characters. That, however, when the kidneys are diseased, as so frequently happens in the latter part of diabetes, we get a mixed form of retinitis, which is indeed difficult to determine from the ophthalmoscopic picture. Lagrange (32) gives the following points in differentiation between retinitis from Bright's disease and diabetes:

Diabetic Retinitis.	*Albuminuric Retinitis.*
1. Tendency to marked atrophy of the optic nerve.	1. Less marked, and the nerve not becoming entirely atrophic.
2. Hæmorrhages multiple, disseminate, and alone.	2. Hæmorrhages equally multiple, but mostly in posterior part of fundus.
3. Extensive alterations of fundus throughout.	3. Mostly in the macula lutea and optic nerve.
4. Hæmorrhages not continuing throughout.	4. Remaining throughout.
5. Exudations small in amount and scattered.	5. Exudations white, fatty in character, with much infiltration of retina and nerve.
6. Changes frequently.	6. Remains a long time the same.

One symptom is, however, more characteristic—namely, hæmorrhages into the vitreous are common in diabetic retinitis, and not so in retinitis from kidney lesions. This is to me an important point in diagnosis, and is a clinical fact which has been noticed by several observers. Why they should occur in this affection and not in Bright's disease is probably due to the more marked changes in the vascular system in diabetes.

As regards the frequency of the retinal affection, Badal, in 52 diabetic affections of the eye, found retinitis 17 times, and in our 21 diabetic affections of the eye, 5 retinitis with hæmorrhages, or some over one fourth of the cases.

In the eye infirmaries of this country for the past ten years I find no recorded cases of the disease. That it does occur is certain, but the diagnosis is not made.

Case XIII.—Male, aged forty-three, clerk, first seen by me on March 18, 1883, when the following history was obtained: For two years past has had a desire for sweet things to eat, and has voided much urine; emaciation has occurred, and great muscular weakness. Ten days before first noticed a failure of vision in the R. E., which for twenty-four hours increased, then remained as at the time of examination, when vision in R. E.=$\frac{20}{70}$, L. E.=$\frac{20}{20}$; no refractive error. Ophthalmoscope showed hæmorrhages into the vitreous and into the retina, the optic nerve was not swollen, and there was no infiltration of the retina. The hæmorrhages were minute and scattered over all parts of the fundus.

25th.—R. E.=$\frac{20}{100}$; more retinal hæmorrhages and some signs of exudation in its tissue. Examination of the urine at this time showed sugar in the urine, seven pints being voided daily, and with a specific gravity of 1·038, and seventeen grains of sugar to the ounce. Bromide of arsenic and a careful diet prescribed, and this treatment rigorously adhered to.

April 25th, one month later, R. V.=$\frac{20}{50}$, and the ophthalmoscopic picture found to be changed. Vitreous hæmorrhages absorbed, and only a few opacities now remaining. Retinal hæmorrhages absorbing, and in some places entirely absent, a slight staining showing the site of the former extravasation. Urine and sugar diminished in quantity, voiding now only three pints daily, and only a trace of sugar.

This treatment continued for another month with good result as to the quantity of urine and sugar voided, but with no further improvement in the vision.

The patient left the city for the sea-side, and after bathing in the surf contracted pneumonia, and died, September 18, 1883, of catarrhal phthisis. The vision remained the same as at last reported, so I learned from the family.

Case XIV.—Male, aged thirty-nine, residing in Jamaica, L. I., sent to me, May 2, 1884, with the history of gradual emaciation and loss of muscular weakness for the past year, and sudden loss of vision in both eyes one week before. Examination revealed V.=$\frac{20}{70}$ in each eye. No improvement by glasses; can not read the largest test-letters of Jaeger's.

Ophthalmoscope shows hæmorrhages into each vitreous, which are fresh and abundant, and in the retina, scattered throughout, are fine punctate extravasations in the macular region and also distant from it; optic nerve hyperæmic but not infiltrated; no exudations into the substance of the retina; the blood-vessels are about normal in appearance. No albumin or casts found in the urine, although many examinations were made. Sugar by the fermentation test was present; the specific gravity was 1·034, and the quantity eight pints daily. The cause of the diabetes in this case was supposed to be due to an injury received in falling from an ice-boat the previous winter, as the health began to decline from this out. The field of vision for sight and color appeared to be normal. Bromide of arsenic, diet, and rest were ordered, and followed for six weeks, when it was found that no improvement had taken place either in the general condition or the eyes, the latter being the same as regards vision; the interior, however, showed some differen arrangement of hæmorrhages.

Iodide of potassium was prescribed, and three weeks later specific gravity was 1·028, sugar less, and the quantity of urine also; no albumin. R. E.$=\frac{20}{50}$, L. E.$=\frac{20}{70}$ (as before). Vitreous and retinal hæmorrhages absorbing, and less hyperæmia of optic nerve. This treatment was continued until August, when the patient went to California, where he died, December, 1885, as I learn, from exhaustion, the eyes remaining always bad, but so that he could read large type.

Case XV.—Female, aged forty-three, seen by me while in the office of Dr. E. G. Loring. In the summer of 1885 the patient, while in the Catskills, noticed failure of sight in one eye, her attention being called to it by the annoyance of seeing objects floating in front of the eye. This gradually increased until she sought advice.

On examination, it was found that vision in R. E.$=\frac{20}{70}$(+), the other being normal. Ophthalmoscope revealed numerous hæmorrhages into the vitreous and also in the retina, some infiltration of the retina, and only a few exudations. The optic nerve slightly congested, the retinal hæmorrhages were scattered throughout the fundus. The appearance of the retinal picture, together with the vitreous hæmorrhage, led me to ask in reference to the quantity of urine voided, when it was brought out that the quantity was in excess, although the patient, an intelligent woman, had not given it much concern. She had also a great desire for sweetmeats. Examination of the urine revealed sugar in large quantity and no albumin. Under treatment by two different physicians, who regulated the diet, she improved, and the retinal appearance changed the vision in power to $\frac{20}{40}$. The restricted diet prescribed being irksome, the patient relinquished it, and, on returning to ordinary diet, the diabetic symptoms reasserted themselves, the eye symptoms again becoming worse by the recurrence of fresh hæmorrhages. The patient is still living and under the care of Dr. Loring, to whom I am indebted for the use of his notes.

Case XVI.—Female, aged sixty-three, first seen by me at the Post-graduate Hospital, December, 1886. Patient a hard-working woman, coming for defective vision in each eye, R. $=\frac{20}{100}$, L. $=\frac{20}{200}$. Ophthalmoscopic examination showed well-marked hæmorrhages into each vitreous and each retina. Those in the vitreous were large and those in the retina small and scattered throughout the whole fundus, and not, as in retinitis albuminurica, in the macular region. This patient was not emaciated, and the only symptom complained of beside the dimness of vision was a strange sensation in the region of the heart. She was referred to Dr. W. H. Porter, who found albumin in the urine and a sound over the heart, which he thought to be due to an opening in the aortic valve, congenital, and not as the result of disease. Later, sugar was discovered in the urine and the albumin disappeared. She was put on the iodide of potassium treatment and she gradually improved, the sugar remaining in the urine but greatly diminished in quantity. The vision improved so that she could go to and from the hospital, where at first she had to be led. When seen by me, January, 1887, R. $=\frac{20}{50}$, L. $=\frac{20}{30}$, and she could read Jaeger No. 4 with correcting-glasses. The ophthalmoscope showed optic nerve of the right eye pale on the outer half, and in numerous points on the retina stainings showing the former position of the hæmorrhages. The vitreous and lens were both clear. Visual field not contracted nor any change in that for color.

The patient is still under the care of Dr. Porter for the general disease. He considers that the diabetes was the cause of the albumin in the urine when first seen, and that its disappearance is due to the less work the kidneys have to do owing to the diminished quantity of urine voided.

Case XVII.—Male, aged fifty-two, clerk, seen first October 9, 1885, when he complained of failure of vision for three weeks past, more rapidly during the past two days. Has not been in good health for one year, being weak and irritable; has lost twelve pounds in weight in as many months. Passed eight pints of urine daily and has great thirst. R. E. $=\frac{20}{100}$, L. $=\frac{20}{20}$. Ophthalmoscope shows vitreous and retinal hæmorrhages, more abundant in the former, and small and punctate in the retina and scattered in all parts.

Optic nerve has red look and outline somewhat indistinct.

No exudations into the retina save one or two points near one vessel near the macular region.

Examination of the urine revealed large quantity of sugar; no albumin or casts. Specific gravity, 1·039, and ten grains of sugar to the ounce. Diet, iodide of potassium, and Windsor water were prescribed, and the patient carefully adhered to it for two months, when the R. V. $=\frac{20}{50}$, and decrease and absorption of the intra-ocular hæmorrhages to a considerable degree, though some remained in the vitreous and retina. The restricted diet becoming unbearable, he returned to ordinary fare, and with it an increase in all the diabetic symptoms; and again failure of vision in each eye, R. $=\frac{20}{100}$ and L. $=\frac{20}{40}$, thus for the first time showing vitreous and retinal hæmorrhages. While under the careful treatment the sugar and urine decreased, and he had to only follow the injunction laid down in the "Code of Health of the School of Salernum" (1), which says:

"At least six times in every fleeting day
Some tribute to the renal function pay."

This patient passed from under my observation, having returned to Ireland, and I have not been able to learn of the final issue of the case.

It will be noticed that in all these five cases reported by me vitreous hæmorrhages were present, and I consider this of much importance in arriving at the diagnosis of glycosuric retinitis from the ocular symptoms alone. I have endeavored to ascertain how frequently this affection occurs in private practice, and have asked many of my friends, and have found, as a rule, that it is exceedingly rare, or if seen it is not so recognized, but rather attributed to some other cause. Dr. Pooley has furnished me with the notes of two cases taken from his private case-book. I would urge the more careful system of indexing diseases in private practice, so that when statistics are wanted they can be had access to and thus much labor saved the compiler.

Amblyopia in Diabetes.—There can be no doubt, in the light of our present knowledge, that diabetes produces amblyopia, which is central, and in which the visual field is not interfered with, but in which there is usually a central scotoma for red and green, and occasionally for blue; that the defect improves with diminution of, and increases with the quantity of, sugar in the urine; that it comes on rather suddenly, and increases, then varying according to the diabetic condition; that it rarely produces blindness, but may result in partial atrophy of the optic nerves. This class of cases may very easily be mistaken for the amblyopia ex abusu, unless care is taken to examine the urine for sugar, as the symptoms are much the same, and, as most men smoke, it is very easy to conclude that that is the cause of the amblyopia. Galezowski was probably the first to point out this resemblance, and, according to him, the diagnosis is very difficult without examination of the urine. The most important distinction drawn by him is that amblyopia ex abusu usually occurs in both eyes; that in diabetic amblyopia one eye may escape. This has not been our experience; from the cases observed by me all have been affected in each eye; this has been also the experience of Mr. Nettleship. It is my firm conviction that the amblyopia occurring in *smokers* having diabetes is due to the loss of nutrition produced by that disease, and not to the effect of tobacco on the system.

Since the invention of the ophthalmoscope much has been written on amblyopia in diabetes, without cataract, and without retinal hæmorrhages or other visible lesions. And it is this particular form of ocular affection that is extremely interesting. A very careful exposition of this subject is presented by Mr. Nettleship and Dr. Walter Edmunds, of London, in the "Transactions of the Ophthalmological Society of the United Kingdom" (4), 1882, and from this we have made frequent use:

> In 1858 Desmarres (5) records the case of a woman, emaciated by diabetes, passing much sugar, with the sight so bad that she could no longer read. Also, a male, aged twenty-five, passing large quantity of sugar, with vision so bad that he can neither read nor write. After seven months' treatment, health improving; the vision was so much better that No. 8 Jaeger, with glasses, could be read.
>
> Begbie, 1861, writing in the "Edinburgh Medical Journal," says he was familiar with a form of "diabetic amaurosis," coming on earlier than cataract, advancing gradually, and remaining permanent. He cites no cases.
>
> The same year Lecorché, in an elaborate paper on "Diabetic Amblyopia," says the cause will probably be found to be a partial or general atrophy of the optic nerve, occurring independently of changes in any part of the brain. The suggestion that some cases of diabetic amblyopia were due to cerebral cause had been previously made by von Graefe (7), who had reported several cases of various forms of eye disease in diabetes.
>
> Seegen, 1870, reports a case of a male, aged thirty-eight; amblyopia, with no ophthalmoscopic changes; vision improved under treatment.
>
> Another author (9) reports the case of a male, aged forty-two; one eye nearly blind from old injury, with diabetic symptoms for six months; passing daily one pound of sugar; vision in the only eye failing for a month before coming under observation. The ophthalmoscope revealed disc somewhat pale, but no other changes. Vision and refraction not stated.
>
> Leber (10) reports three cases, one of which, probably, does not belong to this class, but the other two may be considered.
>
> Male, aged forty-three, passing sugar, but no albumin; amblyopia of R. E., V. = $\frac{1}{2}$; field normal for vision and colors. L. E., high amblyopia; shadows at center of field, and fingers at five feet in outer part; inner half of field absent almost. Final recovery with both, on improvement in the general symptoms. Four years later the vision is reported as being good. A scotoma for white and colors at the central and outer central part of the field was left. No ophthalmoscopic changes.
>
> Male, aged fifty, double equal amblyopia, with central scotoma for colors, but no contraction of the visual field; V. = $\frac{20}{70}$. No ophthalmoscopic changes. He was treated as a case of amblyopia ex abusu, and vision improved to $\frac{2}{30}$, each eye. Two months later, R. E. again became bad; V. = $\frac{20}{200}$; scotoma still present in both. Urine now examined, and found to contain sugar. Under treatment for the diabetes the vision improved.
>
> Forster (11), female, aged sixty-two, having diabetes, in whom the discs became pale, and subsequently showed signs of atrophy. The field in this case was normal.
>
> Galezowski (12), in 1878–'79, reports the case of an officer in the French army, aged forty-eight, passing one hundred and fifty grains of sugar daily. No contraction of the visual field, but vision so imperfect that he could not discern faces at nine feet. No ophthalmoscopic changes. With diminution of sugar, some improvement in the amblyopia. Albumin, later, was found in the urine. He also reports the case of clergyman, aged forty-four, V. = $\frac{1}{6}$; nomal color perception; visual field normal; no ophthalmoscopic changes; much sugar in urine.
>
> Eales (13), of Birmingham, England, reports a case of a diabetic with amblyopia, male, aged fifty, without ophthalmoscopic changes, having a scotoma for red, green, *and blue.* This patient died shortly after being seen.
>
> Bresgen (13), in 1881, reports the case of a male, aged twenty-four, diabetic, with symmetrical amblyopia, V. = $\frac{20}{200}$, with central scotoma for red and green, and with no contraction of the visual field or ophthalmoscopic changes. With an increase in thé quantity of sugar voided the amblyopia increased to $\frac{2}{200}$, and the color scotoma increased also in size.
>
> Mr. Lang, Mr. Nettleship (4), Dr. S. Edmunds, and Dr. Lanford, of London, have reported similar cases. Nettleship has reported the case of a female diabetic suffering from amblyopia. In this case there was no question of smoking.

I have myself seen four cases having central amblyopia, all having each eye affected; two were males and two were females; all had perfect visual fields, and all scotomata for red and green; the men smoked moderately, and the women not.

The accompanying fields of vision are shown, giving the scotoma area, the blind spot, and the visual field.

The histories of these cases are as follows:

CASE XVIII.—W. A. S., male, aged thirty-nine, sent to me by Dr. Galer, of Newtown, N. Y., in 1880; the patient had been suffering from diabetes for two years, and most of that time passing sugar. One month before his visit to me he first noticed trouble in his eyesight; this gradually increased until such time that he could not see to read. When first seen he had R. V.=$\frac{20}{200}$, L. V.=$\frac{20}{50}$. No ophthalmoscopic changes. On testing the visual field, it was found to be normal; the color field showed a scotoma for red and green, as shown in the figure marked No. 1. At this time the patient was passing fifteen grains of sugar to the ounce of urine. The media were clear, and the eyes looked perfectly normal. Three weeks after the first examination the R. V.=$\frac{20}{200}$, as before, and the L. V.=$\frac{20}{70}$. A more rigorous treatment was adopted, the sugar diminished

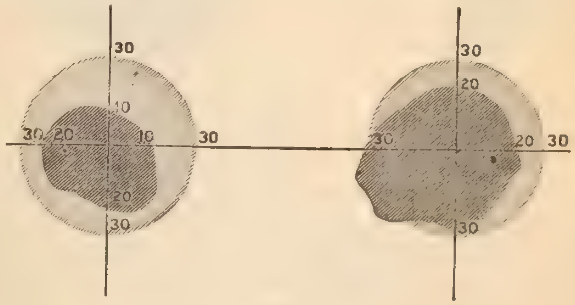

FIG. 1.

in quantity, and the amblyopia improved, but there was no change in the scotoma. The patient died one year later in diabetic coma. No autopsy.

CASE XIX.—Female, aged forty-nine, married. Mother of three children. Sent to me by Dr. Fassit, of St. Albans, Vt., with the history of having had diabetes for the previous six months. One week before coming under my observation she noticed failure of vision, which came on suddenly, and so much so as to give her much alarm. She was at this time passing 150 ounces of urine daily, with much sugar. Vision, each eye, equal to $\frac{20}{200}$. no limitation of the visual field, but central scotoma for red and green, as seen in Fig. 2. No change in the fundus was noticed save, perhaps, a slight pale color to temporal half of the disc. The vision in this case never became worse and did not improve. The patient died two years and seven days after, from exhaustion. No autopsy.

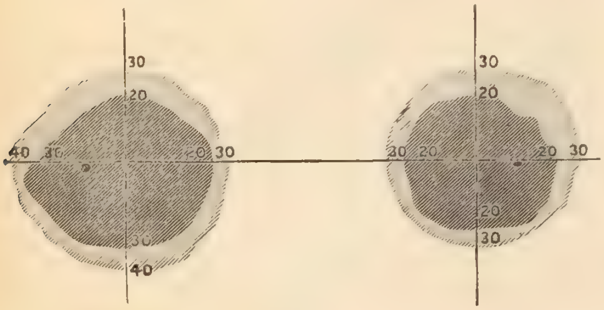

FIG. 2.

CASE XX.—Male, aged forty-eight, seen by me at the Postgraduate Medical School Clinic, December 3, 1887, with the history of failing vision for the three months preceding. Examination of eyes revealed V.=$\frac{20}{70}$ each; no ophthalmoscopic change; visual fields intact, but color scotoma for red and green was found in the central part of the visual field. (See Fig. 3.) This patient was voiding nine pints of urine daily, with large quantities of sugar. The patient was treated by the administration of iodide of potassium; the sugar was diminished, yet the amblyopia continued as before. The patient died eight months later, from asthenia. The eyes were examined repeatedly, but no ophthalmoscopic change could be discerned.

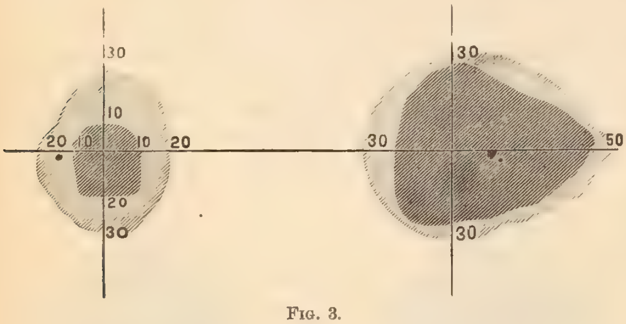

FIG. 3.

CASE XXI.—Female, aged fifty-one, widow, first noticed an increase in her urine in 1882, in the early part of the year, after having received a severe fall on the back; eight months after this she noticed a failure of vision in the R. E. and then in the L. E.; it finally became so bad that she could not read. When seen by me at my office, in December, 1882, she had V.=$\frac{20}{50}$ each, not improved by glasses, and with normal pupils and no ophthalmoscopic change except, perhaps, a slight dirty look to the optic disc. No albumin in urine, but sugar in abundance. The visual fields, as usual, were normal, and green scotoma centrally placed; red was with great difficulty and inaccurately seen. Six months later the patient was examined again, and vision of each eye equal to $\frac{20}{200}$. and scotoma for red and green still present in the L. E.; ring scotoma. (See Fig. 4.) Sugar in urine more than before. Patient died December 3, 1883, of gangrene of the right foot. No autopsy.

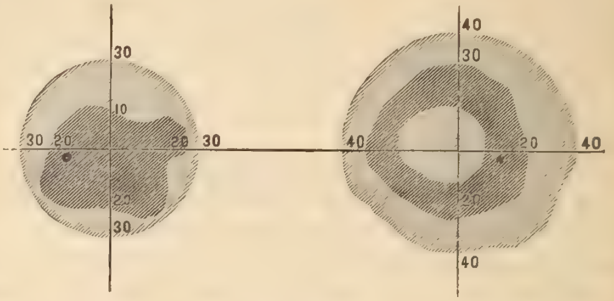

FIG. 4.

In each of these cases I regret that an autopsy was impossible, for it would have been interesting to make an examination of the optic nerves in these cases. Dr. Walter Edmunds and Dr. J. B. Lawford, of London, made such an examination in the case of a patient aged twenty-nine. The optic nerve showed marked changes throughout the whole length of the orbital part of the nerve; in the diseased area was found thickening of the trabeculæ and of the walls of the nutrient vessels; the fibers in the nerves seem to have been destroyed, and to be replaced by an irregularly granular structure, in which there is a large number of staining nuclei.

Mr. Nettleship reports, also, the post-mortem appearances of the optic nerve in a similar case:

> Microscopical examination of the optic nerve showed changes in the orbital portion of the nerve; the portion posterior to the optic foramen was not examined. Longitudinal sections were made of the nerve, and transverse sections at various points. The longitudinal sections showed no changes anterior to the lamina cribrosa. Posterior to the lamina, on one side of the nerve, was a tract with well-marked pathological changes, atrophic nerve-fibers, increase of nuclei, thickening of the connective tissue, trabeculæ, and of the walls of the small vessels. The thickening of the walls of the vessels was most marked in front of the point of entrance of the central artery of the retina. On a transverse section the atrophic patch appeared wedge-shaped; and from the relation of this diseased part to the central artery, at its entrance, it was certain that the change was chiefly in the temporal half of the nerve.

In Samelsohn's case both optic nerves were examined and symmetrical changes were found.

Deutschmann (15) also reports similar appearances microscopically. These post-mortem examinations would lead us to conclude that we have a subacute retro-bulbar neuritis and a subsequent atrophy of the optic nerve-fibers. That the cause of this neuritis is the poison in the blood produced by the derangement of the glycogenic functions. That not only the optic nerves are affected, but also the sciatic and others throughout the system.

Sachs (18), in an elaborate paper on central scotoma, finds the same appearances as above described, and as shown in the accompanying diagram (Fig. 5).

From this clinical picture of the affections of the eye occurring in diabetes it will be seen how varied and how numerous are the ways the poison of the disease shows itself in the same organ, and how we may, from the eye symptoms alone, make a diagnosis of unsuspected diabetes.

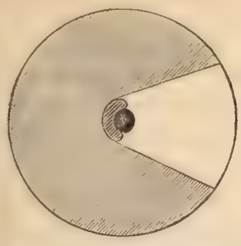

FIG. 5.—Transverse section of the optic nerve, showing wedge-shaped atrophic spot to the outer side of the nerve (after Sachs).—"Archiv f. Augenheil.," Bd. xviii.

In conclusion, the following practical points may be summarized.

1. In view of the recorded facts, shall we not urge the examination of the urine for sugar in every obscure ocular affection?

2. Cataract occurring in a diabetic may be extracted without danger if the patient is previously treated for the general disease.

3. Retinitis occurring in diabetes is usually associated with vitreous hæmorrhages, and that this is a point in favor of the disease rather than retinitis from kidney affection.

4. Diabetic amblyopia is usually associated with central color scotoma for red and green, with visual fields intact, and does occur independent of amblyopia from tobacco and alcohol, as shown by our cases. And, further, diabetes can be diagnosticated by amblyopia when no diabetic symptoms exist.

5. All the diabetic affections of the eye are the result of poor nutrition produced by the disturbance of the glycogenic function, and that the more marked the disturbance, the more profound and more deep-seated the ocular affection.

6. The changes occurring in the eye are also taking place in other tissues of the body at the same time.

> "To man's short reach of mind and scanty powers,
> How much is dubious in the things he sees,
> How much eludes his sight!"

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LEPROSY IN THE UNITED STATES,

AND ITS RELATION TO THE STATE.

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(*Concluded from page 323.*)

DANIELSEN and Boeck, after forty years' experience in Norway, did not believe in contagion. By the report of the East Indian medical officers published in 1867 it is not considered contagious.

The Royal College of Physicians, in order to obtain the best information on this subject, in 1867 sent inquiries to physicians throughout the world whose practice had brought them in contact with the disease, and whose opinions would, therefore, be of value. Thirteen of these had no doubt of its contagiousness, and thirty-four entertained no doubt of its non-contagiousness. Twelve regarded leprosy and syphilis as being intimately related; twenty-one believed there was no relation. Most of those to whom the inquiries were sent regarded leprosy as hereditary, and also thought that it might originate spontaneously under suitable conditions.

The committee reported in favor of non-contagion.

The questions of the relationship to syphilis and the possibility of the disease arising spontaneously I can not regard as worthy of discussing at the present time. Dr. Fitch alone in this country, so far as I can learn, maintains the identity of lepra and syphilis, but I can find no tenable ground for such a belief.

As to cases arising spontaneously, I should as much expect to find men in this audience who would maintain that an oak tree which might spring up in one of our city parks where none was ever known to grow before did not have its origin in an acorn and did not have a parent oak somewhere, because they could not trace its origin. Just as the acorn may lie for years in the soil, so I believe the bacilli lepræ may be hidden in the system for many years before the symptoms appear.

There are facts and circumstances which point to contagion as the cause of the spread of lepra. Some of the circumstances are the following:

The analogy existing between its method of spread and that of known contagious diseases.

Emigration appears to have spread it from Egypt and Syria through Persia, and from the East into the West. It has always followed in the tracks of human travel. Its appearance in the Western Hemisphere may be accounted for in the same way.

The ancient and strong popular belief in the contagious nature of the disease, extending at least as far back as biblical times, when lepers were considered unclean and separated from the clean.

The discovery of the *Bacillus lepræ* by Hansen in 1869, which has been abundantly confirmed, and which is found in leprous tissue the world over.

The analogy which exists between the neoplasms of lepra and those of other diseases in which a specific bacillus is found. The new growths in lepra are granulomata, and similar to those found in syphilis, lupus, tuberculosis, etc., supposed to depend upon micro-organisms.

The existence of such instances of suspected infection as those reported by Atkinson, Costales, and one recently by Kaurin, quoted by Leloir and Besnier,* in which a child of healthy parents, who was the favorite of a leprous great-uncle and often slept with him, contracted the disease while all the rest of the children remained well.

That those going to leprous countries there acquire the disease, in spite of the statement made in the report of the Honolulu Board of Health that "there is nothing in the history of the disease to cause the foreigners visiting our shores to be in the slightest degree apprehensive of danger."

In opposition to this statement, I will cite the cases of at least three of our own countrymen (to which I have referred), and the fact that sixteen white foreigners have been confined in the Molokai leper settlement during the past twenty years, four of whom were Americans. It will also be remembered that Dr. Van Harlingen's case, contracted in Brazil, was that of a native of Pennsylvania.

The disappearance of the disease in those localities where segregation is practiced, and its increase in India, Constantinople, and other places where the diseased are not separated.

On no other hypothesis than that of contagion can the decline of leprosy be explained in Norway, the few cases remaining at large serving to transmit the contagion and maintain the diminishing production rate. Hansen says: "More than a single beneficial influence may, indeed, be at work; but predominant *is this exclusive dealing with the individual leper as himself the source of ill to others.*"

Among recent careful investigators who believe in contagion I will mention Dr. Arning, Professor Leloir, Dr. MacNamara, who sees 3,000 cases each year in Bengal, Dr. Besnier, Dr. Brocq and Dr. Vidal in Paris, Dr. Graham, and Surgeon-General Moore, of the Government of Bombay, who says, in answer to questions sent out by Dr. W. F. McNutt, of the California State Board of Health:

> "I have every reason to believe the disease to be contagious. I have seen a wife with her two children contract the disease by remaining with her husband after he had the disease, while three other children, who left him because of the disease, remained free."

Dr. H. N. Allen, of Seoul, Corea, who has had a large experience in treating leprosy there, regards it as contagious.

It was declared contagious by the governor of South Australia in 1885.

The Hawaiian Board of Health believes in contagion and treats the disease accordingly. It is considered contagious by Dr. Arning, who spent several years in the study of the disease in Hawaii. Dr. Graham says, in Wood's new "Reference Hand-book": "Either bacilli or spores find their way through some abrasion into the body, and the nodules form from the irritation of specific bacilli."

Several instances are known on the Hawaiian Islands where women, apparently healthy, have married the second and third husband after the first had died of leprosy, and their later partners, after a short time, shared the fate of the first. Dr. William J. Morton, of this city, who has seen something of lepra in Africa, says it is there considered dangerous to marry the widow of a leper. One of the strongest points for contagion in the Hawaiian reports is that found in the Sanitary Committee's report of 1878. They say "contagion is apparently remote and perhaps impossible in some cases. Father Damien is an illustration of this statement. He has been in the settlement a little over five years, and has mingled with and served the lepers under the most revolting circumstances, and yet he is as sound in health as when he first arrived." But wait. And here again, as in many other cases, the mistake has been made of looking for signs of contagion too early. Father Damien went as a missionary priest to the leper settlement of Molokai in 1873. In August, 1885 (seven years after the report referred to), outward signs of tubercular leprosy appeared, placing beyond all doubt the nature of the symptoms which the self-sacrificing priest had experienced for two years. He himself had always regarded the disease as contagious.

The following is cut from the London "Tablet" last year some time:

> "We regret to hear that the Apostle of the Lepers of Molokai is beginning to pay the penalty of his heroism. Shut away from all civilized and healthy humanity, Father Damien has for years been a willing prisoner in the island, in which are collected and confined the lepers of all the neighboring Sandwich group. For a long time, though cut off from the outward world, Father Damien continued in good health, though alone among the dead. But the stroke has fallen at last. In a letter written recently he says: 'Impossible for me to go any more to Honolulu, on account of the leprosy breaking out on me. The microbes have finally settled themselves in my left leg and my ear, and one eyebrow begins to fall. I expect to have my face soon disfigured. Having no doubt myself of the true character of my disease, I feel calm, resigned, and happier among my people. Almighty God knows what is best for my sanctification, and with that conviction I say daily a good *Fiat voluntas tua.*' Where is the heroism which will vie with this?"

It was long ago thought that, to prove contagion, the disease should be capable of reproduction by inoculation and experiments upon animals have been carried out by various observers. Up to the present time inoculation experiments in animals have not succeeded, though Melcher, Ortmann, Campana, and others have alleged positive results. Nor should we expect them to succeed in view of the known long incubation period of the disease, and especially in the face of inoculation experiments which have been carried out to a negative issue in the human being by Professor Profeta,* of Palermo, Sicily. This observer, a firm believer in the hereditary nature of lepra, by the way, began inoculation experiments twenty years ago. He has inoculated ten persons, including himself and Dr. Cagnina, and, although the blood and pus of ulcers has been introduced into scarified wounds, placed upon surfaces denuded by blistering, and the blood from the center of leprous tubercles has been injected beneath the skin, the results have always been negative.

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* "Bulletin de l'acad. de méd.," Oct. 11, 1887.

Praiseworthy as these experiments are, they have not, to my mind, proved much of anything.

The blood has been shown to contain the bacilli only to a very slight degree; only acting for them as a medium of transport. It does not appear that leprous tissue containing an abundance of bacilli was employed.

The experiments show, if anything, that these particular individuals were not susceptible, and bear out in a way Vidal's belief that the danger from inoculation is slight, excepting in broken-down subjects.

To test inoculation, Dr. Arning obtained permission of the Hawaiian Government to experiment upon a condemned convict, whose death sentence was consequently commuted to penal servitude for life. Dr. Arning began his inoculation experiments on the last day of September, 1884, after eliminating any leprous taint or history, by inoculating the convict and arranging that he should not be employed outside. The microscope revealed the presence of bacilli lepræ in large numbers at the inoculated spot up to the middle of March, 1885. They have gradually diminished in number, but an excision of a small portion of the scar showed them still present at the date of the report, fourteen months after inoculation. There was nothing at this time in the convict's appearance to denote any development of lepra. Dr. Arning did not consider his experiment concluded or mature for scientific publication, nor has sufficient time yet elapsed, it seems to me, to put it down as unsuccessful.

In view of the hitherto apparent impossibility of transmitting the disease to human beings by inoculation experiments, it seems hardly credible that they should have succeeded in animals, and, indeed, in the "Münchener med. Wochenschrift," Nos. 16–18, 1887, Dr. Wesener reports a series of experiments made by himself, and, after a careful review of those made by other observers, says: "All attempts up to the present time to transmit lepra to rabbits have shown that the lepra bacillus does not produce in them either a local or a general leprous disease." From the lesions produced, the author regards these cases rather as tuberculosis.

The microscope has shown the bacilli to be more numerous in early and recent lesions, and it seems to me not improbable that the disease may be more readily transmissible in the early stages of the disease, even possibly before outward lesions appear, and that it may not be so dangerous to others in the stage at which it most frequently comes under observation and contagion is looked for, in this respect bearing a close analogy to syphilis, with its loss of infective power in the late stages. Were this true of lepra, it would explain the unsuccessful inoculation experiments.

In favor of this theory we find many instances of women, apparently healthy, who transmit the disease, and only subsequently show the first signs of it themselves.

In a paper on the contagiousness of molluscum contagiosum* I have already expressed the view that, in these questions, too much weight should not be given to negative evidence, as it is not always possible to artificially inoculate diseases which are well known to be contagious. The environment must be such as is required for the development of the disease. I have seen futile attempts to inoculate favus, tinea versicolor, and molluscum, and have never seen a positive result; still, I can conceive of the possibility of bringing the system of a person into such a condition that these diseases could be reproduced.

While intentional inoculations have, for one reason or another, failed, there appear to be well-authenticated instances of its being accidentally accomplished. Dr. Saxe, president of the California State Medical Society, in a visit to the Sandwich Islands, learned of a case of leprosy in the son of a physician, which was attributed to his sticking his leg with a pin which a leper boy had been sticking into his own skin. In the "Supplementary Report on Leprosy," California State Medical Society, 1887, Dr. Saxe relates the further case of a German, Johann Gaisen, at the Molokai settlement, who was bitten by a leper, who has since died at the settlement. The disease appeared in Gaisen seven years after the bite. This patient has three children; one, aged seven, shows signs of leprosy.

H. Charles Tries, another German, is married to a native leprous woman, who was formerly the wife of a native who abandoned her and went to Salt Lake, Utah, where he was at last accounts a leper. (Another case in this country.) Tries is sure he caught it from his wife.

Dr. Taché,† visiting physician to the lazaretto at Tracadie, reports a case of leprosy developed in a healthy young man after the discharge of a leprous ulcer had come into contact with his shoulder, the skin of which had been abraded by carrying the coffin containing the body of a deceased leper. The first manifestation occurred some three years after the exposure. "Though this patient's genealogy was traced for several generations back, there had never been any leprosy in his family. His sister developed the disease a few years after."

Dr. Mouritz (Hawaiian Reports) says: "A man tells me that, after direct contact with a female, he became aware of a small sore. This not healing, he applied to a physician, and was treated for syphilis. Later on spots appeared on his body, and his eyebrows began to diminish, and he learned from a third physician that he had leprosy, the female at the time not manifesting outward signs of leprosy, but afterward has done so. . . . Such cases are well known to many laymen and professional men as correct, and have laid a well-founded base on which to establish leprosy as an inoculable disease."

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* "Giorn. intern. delle sc. med.," 1884, fasc. 4; "Annal. de derm. et de syph.," January, 1886.

* "Journal of Cutaneous and Venereal Diseases," August, 1886.

† "Canada Lancet," January, 1886.

Leloir * has pointed out that lepra would appear to be contracted by inoculation and not by contact, from the fact that the epidermis does not, as a rule, contain bacilli, and that the epidermo-dermic basal membrane apparently constitutes a barrier to the passage of the micro-organism in either direction.

Its apparent transmission through vaccination seems to be shown by several facts. It is stated in the official Hawaiian reports that just previous to the time leprosy began to take such strides there had been an epidemic of variola, and vaccination was generally enforced. There not being sufficient medical men for the work, unskilled persons did much of it, and careless vaccination from arm to arm was common.

Dr. Suzor, of Mauritius, stated in the "Progrès médical," No. 14, that "in one instance two children of healthy parents became lepers, apparently as the result of having been vaccinated with lymph taken from a child belonging to a leprous family," and he thought the cases furnished conclusive proof of the communicability of the disease by vaccination.

Professor Gairdner, of the University of Glasgow, relates a most instructive and convincing instance of lepra following vaccination ("British Med. Journal," June 11, 1887). Six or seven years ago a boy of Scotch parentage was sent to him by a doctor in the tropics. The diagnosis of leprosy was abundantly confirmed. The history was that the doctor in the tropics had vaccinated his own son with virus derived from a native boy who subsequently showed signs of leprosy. Ignorant of the leprosy in the native, the doctor had vaccinated the boy sent to Professor Gairdner from his own son's arm. Finding, after some years, that leprosy had appeared in this patient, he sent him to Scotland. The doctor having died, his son was also sent to Scotland and placed at a school. He was examined by Professor Gairdner, Dr. Lieving, and Dr. Anderson, and a report was made to the boy's guardian that it was undoubtedly a case of lepra, but of a mild type.

In the mean time Professor Gairdner's first patient died of the disease.

In confirmation of the possibility of transferring lepra through vaccination, Dr. Arning has found bacilli lepræ in abundance both in the lymph and crusts of a case of tubercular leprosy vaccinated for the purpose of examination. Respecting the indiscriminate vaccination which has been carried on in the Hawaiian Islands he says: "There have, if my information be correct, unquestionably new centers of leprosy developed after vaccination was practiced."

The local epidemics are most instructive as regards the question of contagion.

In the outbreak in Louisiana in 1866, recorded in Dr. White's * article, already referred to, the second, third, and fourth cases observed were in sons of the women first afflicted. This surely pointed to heredity, but the fifth case was that of a nephew, and, most important, the sixth was that of the nurse who had been in constant attendance upon the first patient, and had often slept in the same bed with her.

Let us look at the epidemic of Cape Breton for the lesson it teaches.†

Betty MacCarthy was taken sick in 1852. She had five children: No. 1 died of lepra after 20 years of the disease; No. 2 after 12 years; No. 3 after 10 years; No. 4 at the age of 21; No. 5 at the age of 20.

Here, again, those who defend the theory of heredity would have a strong case were it not for the fact that No. 5 married and her husband died of lepra after having it for six years. This couple had two children, who both died of lepra.

James Cameron married another daughter, and was reported in 1881 to have the disease. John Brown nursed patient No. 2, and became a leper.

Probably the most convincing instance of direct transmission is that reported by Dr. Benson ("Dublin Jour. of Med. Sciences," June, 1877), cited by Brocq, Vidal, Leloir, Besnier, and others. In 1872 Dr. Benson presented a patient before the Medical Society of Dublin:

> He was an Irishman who had lived for twenty-two years in India, and returned with leprosy. For a year and a half this patient occupied the same bed with a brother, and then he died. In 1877 Dr. Benson presented this brother before the same society, and there was no doubt about his having leprosy. This brother had never been away from Ireland except to go to England many years before. Besides sleeping with his brother, he had worn his clothes.

It is asked why, if lepra is contagious, does it not spread among the patients and attendants in Charity Hospital for instance, or why does it not spread in California from the Chinese?

I can only answer that experience has shown that the danger from a single case in a general hospital is not great, and not nearly so likely to infect others as the individual nurse or attendant in a leper hospital is likely to become infected. About 9½ per cent. of the attendants at Molokai sooner or later get leprosy. And the report for the two years from 1884 to 1886 shows that 52 attendants and friends in the settlement became lepers out of a total census of 943 cases.

Other transmissible diseases treated in general hospitals do not of necessity spread. I have never known an attendant, physician, or patient to contract scabies in Charity Hospital since I have been connected with the institution, although there are always cases in the wards. Why, then, should a disease which we believe to be but mildly contagious spread with any great rapidity?

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* Besnier, memoir presented at Academy of Medicine, Paris, October 11, 1887.

* "Am. Jour. of the Med. Sciences," October, 1882.

† Dr. Phedran, "Can. Med. Jour."

On the other hand, how do we know that one of these lepra patients is not responsible for the sporadic cases among natives referred to?

These patients frequently leave the hospital for a longer or shorter time, and go anywhere and everywhere at will.

Were the Chinese lepers allowed to go at large and associate with their fellow-countrymen, we might soon look for the development of new cases, and so soon as the race prejudice against them has disappeared and they associate with the lower classes of whites, a spread to natives may be anticipated.

If the disease is contagious it must, in the light of present science, depend upon a micro-organism. It is not, however, to be put down as necessarily contagious because a bacillus is found.

However, we know that the disease is the same in all parts of the world; we therefore argue that the cause must be the same, and when the same bacillus is found in all leprous tissue the world over, and is found nowhere else, we have, to say the least, strong presumptive evidence that the cause has been found.

Many have believed in the heredity of lepra to the exclusion of contagion. I am not prepared to deny that it may not in some cases be transmitted by heredity just as syphilis may be, and I can see no reason why this should not be so at times. The testicle is usually implicated early in leprosy, and later in the disease sterility is often marked, and the objection to lepers begetting leprous children has been raised by Leloir that the spermatic germ would probably not survive the presence of bacilli.

It is possible that the mother may infect her offspring, though remaining herself apparently free from the disease, as is seen in syphilis—latent syphilis (Law of Colles). It is certain that there is no such thing as congenital leprosy, so far as any manifestations go. The children of lepers usually show the first signs of the disease at the age of about five or seven years, and this would appear to correspond quite accurately with the now well-recognized period of inactivity, or prodromal stage, of the acquired disease.

Against the theory of heredity there are instances in which the children removed early from their parents remain free, while those remaining with them become lepers.

Even among the children born in the leper settlement of Molokai few by comparison show signs of the disease, and in those that do the first manifestations are discovered at about the age of ten.

Dr. Fitch found but two leprous children out of the twenty-six born at Molokai—one aged fourteen, the other nine. He had never seen it develop before the eruption of the permanent teeth.

Leloir believes the disease can be transmitted during conception.

Lutz says heredity is the exception in Brazil.

Even Zambaco has only found direct or indirect heredity in one fortieth of the cases. One thing is certain, and that is that heredity is not the sole cause of propagation, for we find abundant instances of adults, themselves healthy, with no possible hereditary taint, who go into a leprous country and acquire the disease.

I submit that the facts and circumstantial evidence presented are sufficient to make out a pretty strong case against lepra as a contagious disease. All that is wanting is a successful inoculation, and I do not feel at all sure that it will not be forthcoming. To be sure the contagion is not a very active one, and the danger from isolated cases is very slight, but I hold that it is the duty of the State to give its citizens all possible protection in matters of health, and if by a little timely interference it can avert from a single one such a fate as awaits the Hawaiian citizen who becomes thus afflicted, I believe it clearly the duty of the State to do so.

It may be asked, Why not then advocate State interference for syphilis, phthisis, and other diseases with similar powers of infection? If I were as thoroughly convinced that by segregating all subjects of syphilis or tuberculosis we could stamp out these diseases once and for all from this country, as I am that the same thing can be done in the matter of leprosy, I should advocate it. Especially should I do so if the number of cases were no greater than in lepra, and it would entail no greater hardships than would segregating all lepers who are now here, and preventing others from entering.

Does segregation result in decreasing the number of cases and preventing the spread of the disease?

Segregation can best be studied at the present time in Bergen (Norway), Tracadie, N. B., and Molokai, Hawaiian Islands. According to the statistics of Kaurin quoted by Leloir in 1885, it is evident that leprosy is rapidly diminishing in Norway, and Hansen said at the Congress of Copenhagen that in the various districts the decrease was proportionate to the strictness of isolation. It was in all likelihood due in great part to segregation and isolation of cases that Europe was freed from the scourge. Nineteen thousand leper houses are said to have existed in Europe during the twelfth and thirteenth centuries, and Jonathan Hutchinson tells us that there are still in Cornwall several *well endowed* institutions for lepers, but no lepers to treat.

As an endemic disease leprosy has practically ceased to exist in most parts of Europe where its ravages were so terrible during the Middle Ages, and the cruelties inflicted upon the victim of the disease were carried to such an extent that a leper died in the eyes of the law as soon as he contracted the disease, and the Church read a burial service over him before he was separated from his fellow-men. Norway alone in northern Europe has the disease in endemic form, and Spain and Sicily in the south, though it is found in parts of Russia, France, Italy, and elsewhere, Leloir having recently found it in northern Italy, where it was supposed to have wholly disappeared.

In New Brunswick the total number of lepers in 1875 was thirty-six. In 1885 it had been reduced to twenty-five. Segregation is here not enforced but voluntary, and, thanks to the efforts of the clergy, generally accepted by the sufferers as the best thing for themselves as well as for the community. Dr. Smith attributes the decrease to the improving condition of people *and the segregation of those affected.*

Danielsen and Boeck write: " It can be made harmless to the rest of the people only by isolation; to experiment with this scourge on any other theory than this is dangerous."

Turning to Hawaii for opinions respecting segregation, Dr. Mouritz, resident physician at Molokai settlement, says: "That all lepers should be segregated I quite agree." Mr. Meyer, agent of the board of health at Molokai, believes that if segregation had been rigidly enforced when the law was first enacted the disease might have been stamped out.

Dr. Arning's plea for segregation is independent of actual contagion being definitely settled, and says: "We must look upon every single leper as a hot-bed of disease quite independently of the exact condition under which he can transmit it to others."

Piffard advocated segregation for this country in 1881 in a paper read before the Academy of Medicine, and in his article in the "Journal of Cutaneous and Venereal Diseases" in 1883 says: "This will have to be done sooner or later, and the sooner, the less difficult the undertaking."

White also advocates segregation in his article already mentioned.

Public welfare, it seems to me, demands that some law be enacted by the National Government which will prevent lepers from entering this country from any side, and that those now here be compelled to enter a suitable hospital. State legislation will not furnish the necessary relief, for if we prevent lepers from remaining at large in this State they will only be driven to some other part of the country.

Dr. Fox* says: "The banishment from home and friends of a leprous patient who is by no means likely to transmit the disease to others seems to me to be uncalled for and unjust." I agree with Dr. Fox that it is humane to keep lepers who come to us and to allow them full liberty, but I can not look upon the increasing number as devoid of danger. The subject is one of too much importance for us to deal with the question of the individual.

It is a question of national interest and must be settled on the basis of what means will prevent a national calamity. If there is no cause for fear, well and good. If there is any danger, let us not hesitate because the individual would suffer. "*Salus populi suprema lex*" is the motto which must guide us.

Although the question of therapeutics is foreign to the scope of this paper, I desire to say a word regarding treatment; and, first, I can not look upon the disease as so absolutely incurable as most authors have done. I find many instances in literature of great improvement taking place under the use of remedies. I have myself seen the good effects of treatment to a limited extent, and there are reported cases of cure.

Jonathan Hutchinson, in a lecture in November, 1885, spoke of a lady whom he had treated thirty years before and who for fifteen years had been well. He mentioned another case of a missionary who had become a leper, and lost his sight and had contraction of the fingers, but in whom there was no longer any tendency to the development of leprous symptoms.

Grönvold mentions a case in this country in which the disease had stopped for years.

Unna reported a case of cured lepra in the "Monatshefte für praktische Dermat.," 1885. He recommends the whole series of reducing agents, both internally and externally, believing that the bacillus is very greedy for oxygen, and consequently we might suppose it relatively easy to destroy by the aid of remedies greedy for oxygen. Among these reducing agents he has found as the most useful ichthyol, chrysarobin, pyrogallol, and resorcin.

Of course, before a case can be regarded as surely cured, many years must pass to make it positive that no recurrence takes place. Hansen says the macular form is often cured.

As regards surgical treatment, I think much may be done to improve the appearance of these patients, which is often so repulsive. In the case I have shown healing took place promptly by first intention after each operation, and scarification gave good results.

I think we are justified in the following conclusions:

1. Leprosy has existed to a considerable extent in this country during the past twenty years.

2. The tendency is for the disease to increase, not only from immigration, from the visits of foreign lepers seeking health, from the return of natives who have contracted the disease abroad, but also from the occurrence of sporadic cases.

3. It is a contagious disease in the sense of its being transmissible from one individual to another, and may, like syphilis, be transmitted from parent to offspring.

4. Transmission probably takes place, in some instances at least, through inoculation.

5. Segregation has been proved to be the only sure means of freeing a country from its ravages.

6. It is the duty of the government through national legislation to establish one or more central leper hospitals or isolated settlements for the segregation, care, and scientific treatment of those afflicted, and for the protection of the community at large.

102 EAST FIFTY-SEVENTH STREET, NEW YORK.

The Reduction of Nitrates by Micro-organisms.—"Mr. Percy Frankland, in a paper read to the Chemical Society on the 16th ult.," says the "Lancet," "gave an account of some observations he had made on the action of thirty-two micro-organisms on nitric acid contained as nitrates in nutritive solutions. About half of the forms (all of which were obtained from air and water and cultivated in a state of purity) reduced the nitrates to a greater or less extent to nitrites. No effect was produced by the exclusion of air. The author suggested that the difference in reducing power may in certain cases be available as a means of distinguishing micro-organisms morphologically very similar."

The Cancer Bacillus.—"The discovery of the cancer bacillus," says the "Lancet," "threatens to have as many claimants as the authorship of Junius's Letters. In addition to Dr. Scheuerlen, who was the first before the public, two Italians announce themselves as having independently made the discovery—Dr. Barnabei, Professor of Clinical Medicine at Siena, and Dr. Sanarelli, a graduate and teacher of the same school. But, it seems, a compatriot of Scheuerlen is also in the field to claim priority in the discovery—Dr. Schill. France, too, not to be outdone, has her special claimant in Dr. Perin. And, finally, Brazil, in Dr. Domingos Freire, seeks to vindicate the honor of the discovery to the New World."

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* "Quarterly Bulletin," November, 1885.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MARCH 31, 1888.

CREDÉ'S METHOD OF PLACENTAL EXPRESSION.

Although Mr. Dease, of Dublin, wrote, as early as 1783, "Should the detachment of the placenta not be effected in the usual time, it will be much facilitated by the operator judiciously applying his hand to the region of the uterus, which he may excite to the necessary contraction by gentle friction," and although Ramsbotham, in 1839, in his text-book, condemned pulling and jerking at the cord, and advised instead gentle pressure over the uterus, it was not until 1860 that external expression of the placenta was placed on a scientific basis, chiefly by the labors of Credé, of Leipsic. Shortly after Credé's publication, the method came to be known by his name, and it has been recommended in the obstetrical books of all languages, with the notable exception of Charpentier's classical work, in which a warm protest is entered against it. Notwithstanding the general acceptance of the method, there have not been wanting those who, from time to time, have dissented from it. Whenever the criticism has seemed to call for it, Credé has defended his method manfully. His latest defense is directed against an attack that was made at the last meeting of German naturalists and physicians, at Wiesbaden, and is published in a recent number of the "Archiv für Gynäkologie."

He discusses the objections *seriatim.* In answer to the accusation that he was guided by the watch in his procedure, he refers to his different writings, in which it is distinctly stated that the time for expressing the placenta should depend upon the circumstances of the case, and should have three different objects in view: (1) the removal of existing dangers, (2) the avoidance of threatened dangers, and (3) the saving of time. The first object calls for immediate action, as everybody agrees. To accomplish the second, an effort at placental expression should be made with the second, third, or fourth pain, but the placenta may not be expelled until the tenth pain. Usually from fifteen to thirty minutes are consumed in the process. No sane man would object to recourse to some procedure to accomplish the third object, provided the woman's safety was not endangered thereby. To the charge that the method is attended with increased loss of blood he replies that accurate weighings of the blood lost—as accurate as they could have been—by different observers have not sustained the statement.

One of the most serious objections raised was that the method favored the retention of portions of the membranes in the uterus, and thus heightened the danger of septic infection. Credé denies the premise; furthermore, granting it to be true, he contests the legitimacy of the deduction with the following facts: From January 1, 1883, to March 31, 1887, 4,969 women were delivered in the Leipsic clinic and Poliklinik without any attention being paid to retained portions of the membranes, and in not a single case did death or even severe illness ensue from such inattention. That the method requires some skill Credé does not deny; some skill is demanded in any procedure belonging to the art of medicine. The beginner must know how, and with very little practice he will acquire the necessary skill. Reliance on the action of the abdominal muscles has been recommended to supersede pressure over the uterus, but after delivery, especially in a multipara, the abdominal muscles are flaccid and incapable of powerful contraction. Stimulation of the lower part of the uterus also has been advised, but by Credé's method the whole uterus is stimulated to contraction, more especially the fundus, where the thickest muscular layers are situated. It was suggested at Wiesbaden that the body of the uterus should be drawn up over the placenta. Not only would this be contrary to nature's process, but it would involve considerable danger, inasmuch as the lower segment of the uterus is thin and easily torn. The theory that the separation of the secundines requires the accumulation of a certain amount of blood between them and the uterine wall has but few adherents, and does not appear to be well founded. Credé favors the old view that the separation is brought about by the uterine contractions. In conclusion, he sums up as follows: His method of dealing with the placenta is in accordance with the natural process; it has been tested by experience; the objections raised against it at various times have been either unfounded or directed against phantoms; of the many recent proposed modifications of the method, some are not new, and those that are new are worthless; in short, the method stands unassailed.

MINOR PARAGRAPHS.

THE MONOPOLY IN ANTIPYRINE.

According to the "Archives de pharmacie," quoted in the "Progrès médical," the *Société de médecine pratique* has lately been considering the practicability of freeing the professions of medicine and pharmacy from the monopoly in antipyrine enjoyed by Knorr and his agents. They have no right to the exclusive production of dimethyloxyquinizine, which has long been known, but they assume the sole right to make and sell it under the name of antipyrine. Hence, the member of the society who brought the question before it suggested the application of some other name to the product. This, however, the committee to which the matter was referred considers both inexpedient, since a great mass of literature has accumulated in which the substance figures only under the name of antipyrine, and unnecessary, inasmuch as the compound is used only as a medicament, and a drug can not lawfully be patented in France. The conclusion is that anybody in France is at liberty to make antipyrine and sell it under that name.

FRENCH AND GERMAN HOG PRODUCTS.

There can be no doubt that the President is abundantly justified in his recommendation to Congress that an act be passed prohibiting the importation of French and German hog products for a time. The reports from our minister at Berlin and our consul at Marseilles show a great prevalence of trichinosis in certain parts of Germany and of a disease among hogs in a portion of France that seems essentially the same as is called by us hog cholera. With far less reason than this state of things affords, the governments of both France and Germany have taken more stringent measures against the importation of American hog products than those contemplated by the President.

VALVES IN THE PORTAL VEIN.

The announcement is made, in the shape of a dispatch to one of the newspapers from Boston, that Dr. William S. Bryant, of that city, has discovered that in the majority of young infants the portal vein and its branches are provided with valves. It is said that Dr. Bryant has not yet satisfied himself as to the age at which the valves disappear. The matter is of interest, of course, only in connection with the study of development.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 27, 1888:

DISEASES.	Week ending Mar. 20.		Week ending Mar. 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever..............	11	4	13	3
Scarlet fever...............	160	29	145	20
Cerebro-spinal meningitis....	4	5	1	0
Measles..................	57	7	59	1
Diphtheria..	144	58	127	45
Small-pox................	13	6	20	1

The Health of New York City.—During the four weeks ending Tuesday, March 27th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 36 cases and 11 deaths; scarlet fever, 600 cases and 91 deaths; cerebrospinal meningitis, 19 cases and 15 deaths; measles, 238 cases and 13 deaths; diphtheria, 535 cases and 181 deaths; small pox, 60 cases and 8 deaths.

The Association of the Alumni of the Long Island College Hospital held its annual meeting on the 7th inst. Officers for the ensuing year were elected as follows: President, Dr. Charles E. De la Vergne; vice-president, Dr. F. H. Colton; secretary, Dr. H. Messenger Ayres; corresponding secretary, Dr. Robert L. Dickinson; treasurer, Dr. Charles N. Dixon Jones; councilors, Dr. John Harrigan, Dr. John A. McCorkle, Dr. Frank West, Dr. B. F. Westbrook, Dr. James W. Fleming, and Dr. C. C. Henry. The alumni prize of $100 was awarded to Dr. A. H. Buckmaster, for an essay entitled "The Galvanic Treatment of Fibro-myomata; an Experimental Research." Honorable mention was made of an essay by Dr. Charles N. Dixon Jones, entitled "The Ætiology and Pathology of Rhachitic Deformities, with a Report of a hundred and two Osteotomies without Suppuration."

The College of Pharmacy of the City of New York held its fifty-eighth commencement exercises at Steinway Hall, on Wednesday evening of this week.

A Physician Fined.—A Philadelphia physician has been fined $25 for failure to report a case of varioloid until three or four days after he had satisfied himself of the true nature of the disease. A woman who washed the clothing of the patient contracted small-pox, from which she died.

The Rochester City Hospital.—The sixth annual commencement exercises of the Training School for Nurses were held on Thursday evening of this week. Diplomas were awarded to a class of nine ladies.

The Alumni Association of the Medico-chirurgical College of Philadelphia.—We understand that Dr. John B. Hamilton, Supervising Surgeon-General of the Marine-Hospital Service, is to deliver an oration on the occasion of the annual meeting, April 5, 1888.

The German Surgical Society.—The seventeenth meeting of the *Deutsche Gesellschaft für Chirurgie* is to be held in Berlin, from the 4th to the 7th of April.

The German Gynæcological Society.—The second meeting of the *Deutsche Gesellschaft für Gynäkologie* will be held at Halle a. S., from the 24th to the 26th of May.

The French Academy of Medicine.—Dr. Sayre and Dr. Lusk, of New York, have been proposed as corresponding members of the Academy.

The Death of Professor Ernst Wagner, of Leipsic, the well-known writer on pathology, is stated by the "Progrès médical" to have taken place on the 10th of February. Professor Wagner was fifty-nine years of age.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 17, 1888:*

Rush, W. H., Passed Assistant Surgeon. Detached from the Navy Yard, New York, and ordered to the Naval Hospital, Philadelphia, Pa.

Steele, J. M., Passed Assistant Surgeon. Detached from the Naval Hospital, Philadelphia, and ordered to the Coast-Survey Steamer Bache.

Oberly, A. S., Medical Inspector. Detached from the Navy Yard, Portsmouth, N. H., and to await orders.

Du Bois, F. L., Surgeon. Ordered to the Navy Yard, Portsmouth, N. H.

Keeny, James, Assistant Surgeon. Ordered to the Receiving-Ship Minnesota.

Deane, C. W., Passed Assistant Surgeon. Detached from the Marine Rendezvous, San Francisco, and ordered to the Coast-Survey Steamer McArthur.

Auzal, E. W., Assistant Surgeon. Detached from the Coast-Survey Steamer McArthur, and ordered to the Marine Rendezvous, San Francisco.

Biddle, Clement, Passed Assistant Surgeon. Ordered to the Naval Academy, Annapolis, Md.

Society Meetings for the Coming Week:

Monday, *April 2d:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association (annual); Providence, R. I., Medical Association; Hartford, Conn., City Medical Association: Chicago Medical Society (annual).

Tuesday, *April 3d:* New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association (annual); Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Broome (quarterly) and Niagara (quarterly—Lockport), N. Y.; Essex, N. J. (annual—Newark), Hudson, N. J. (Jersey City), and Union, N. J. (annual

—Elizabeth), County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Chittenden, Vt., County Medical Society.

WEDNESDAY, *April 4th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Philadelphia County Medical Society (regular).

THURSDAY, *April 5th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua; Boston Medico-psychological Association; Washington, Vt., County Medical Society; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *April 6th:* Practitioners' Society ot New York (private).

SATURDAY, *April 7th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

OBITUARY NOTES.

Hampden Aulick, M. D., of the medical corps of the navy, died last Saturday at his home, in Winchester, Virginia, at the age of forty-one years. His illness is said to have arisen during his last term of sea-service, on the Alliance.

William B. Goldsmith, M. D., of Providence, R. I., superintendent of the Butler Insane Asylum, died suddenly of pneumonia on the 20th inst., at the age of thirty-five. He was graduated at Amherst College. He passed several years in the study of insanity in various European hospitals. Some seven years ago he was called to the charge of the insane asylum at Danvers, Mass., and on Dr. Sawyer's death, two years ago, he was invited to accept a similar position at the Butler Asylum. His sudden death is deeply lamented by all who came to know his sterling worth. In his specialty of insanity he was generally recognized as occupying a leading position among the younger men of the profession.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of March 5, 1888.

The President, Dr. C. L. DANA, in the Chair.

Thomsen's Disease.—The PRESIDENT reported a case, in some respects atypical, and showed a specimen of muscle. The patient was a man, thirty-five years of age, single. He had been delicate as a child, and at the age of fifteen or sixteen years had masturbated, but not to excess. At the age of fourteen years he had been affected with talipes varus in the left leg, but it was cured by tenotomy. The symptoms of the disease in question had not appeared until the twentieth year, when the patient began to notice stiffness of the hands and difficulty in opening them when they were closed; also stiffness of the leg and of the muscles of mastication. He tired easily, especially in the arms. Until recently he had had a high-pitched child's voice and a child's larynx. Erections were incomplete, and there was mental difficulty in concentrating his thoughts. The muscular development was good. Measurement around the biceps gave ten inches in each arm. The dynamometer showed 40° in the right hand and 38° in the left, the normal measurement by the president's dynamometer being 43° to 50°. There were tonic contractions of the calf muscles and of the pillars of the fauces. Striking the muscles of the arm or forearm caused tonic contractions in those muscles. Striking the biceps with the percussion hammer would cause a welt and a myoid tumor as well. There was no increase of irritability to mechanical stimulation in the nerves. By galvanism Erb's reaction was obtained. There was increased muscular irritability, also a closure tonic contraction which persisted as long as the current continued to be passed. There was closure tetanus both to the cathode and to the anode. There was no opening contraction to either pole. A peculiarity of the reaction to faradaism was that in the arm the contractions persisted after the current ceased to be passed. There was no ankle clonus, no increase of the reflexes, and no spastic condition. In the eye the fundus was normal, but there was a fibrillary contraction of the muscles of the lid. There was vaso-motor weakness; the hands and feet were red, and easily became cold.

A piece of the supinator longus had been removed; also, for comparison, a piece of the same muscle from the president's own arm. These specimens had been placed in weak alcohol, and stained with picro-carmine and Bismarck brown. The specimen taken from the patient showed an increase of the nuclei of the sarcolemma, an increased number of fibers, and, in addition, a dichotomous division of the fibers such as was found in the muscle of the heart. This was characteristic of Thomsen's disease, and was supposed to indicate reversion to an earlier type. The tonic contractions of this disease, too, were characteristic of unstriped muscle fiber.

Dr. GEORGE W. JACOBY had examined the specimens, and compared them with those from his own case. He did not consider this the typical case which Erb's monograph had described. Erb had excluded all of the published cases but eight. Erb's typical case showed no disease of the central nervous system. In the president's case there was at least a suspicion of such disease. The reactions of the muscles, too, were incomplete, or failed to fulfill the requirements given by Erb. The speaker did not, however, believe in Erb's lines. He thought they were too close. While this case did not come under the heading as limited by Erb, it did come under the name as understood by others. Erb's theory was that of a disorder of the muscles themselves, a congenital malformation of the muscular system. If the fissuring of the muscles and the increase of nuclei in the case under discussion were dependent upon a central affection, this alone was an interesting fact. It would demonstrate that, microscopically alone, a diagnosis of myotonia congenita could not be made. Our knowledge of primary muscle affections was not yet on a solid basis. It was possible that there was first trouble in the central nervous system, from which the other proceeded.

Dr. C. HEITZMAN had examined the specimens with a low power, and had been impressed with the belief that this was not a genuine case of Thomsen's disease. In a typical case the nuclei of the muscles were augmented. The president had made Erb's mistake when he spoke of the nuclei of the sarcolemma. The sarcolemma was a structureless membrane. There was also augmentation of the sarcoplasts, or muscle-corpuscles. There was too much muscle substance from the earliest period; hence the name myotonia congenita. The president's case, on the contrary, could not be called congenital, as the disease had not developed until the twentieth year. Moreover, the muscle-fibers were not distinctly augmented in size; compared with those in Dr. Jacoby's case the difference was marked. Besides, the fissuring was not prominent. For these reasons he was loath to accept the diagnosis. He was, on the other hand, unable to tell what else the condition could be.

Dr. J. B. **Emerson** had examined the patient's eyes. There was no insufficiency of the muscles, and the pupils had reacted normally.

Dr. M. A. **Starr** realized that we could not yet lay down any positive deductions in regard to electrical reactions. In degeneration we observed the pure reaction of degeneration, an intermediate reaction of degeneration, and the normal muscle reaction. Erb had given the reactions for three cases only. Other cases might not substantiate those results. He considered the president's case valuable and one to be put on record. For reliable data a large number of cases were required. Even Dr. Heitzman's objection of muscular anomalies was not fatal to the theory of its being a case of Thomsen's disease.

The **President** explained that he had not called the case one of myotonia congenita, but an atypical case of Thomsen's disease. It remained to be proved whether myotonia was always congenital. He had recently seen a case which commenced at the eighth or tenth year. Since the appearance of Erb's book four additional cases had been reported besides his. He agreed with Dr. Heitzman that the enlargement of the fibers was not positive. He had measured the fibers with a stage micrometer in the specimen from Dr. Jacoby's case, in that from the case under discussion, and in that from his own arm. He had found the fibers in the first $\frac{1}{400}$ to $\frac{1}{300}$ of an inch broad; in the second, $\frac{1}{250}$ to $\frac{1}{400}$; and in his own, $\frac{1}{450}$ of an inch. Thus, in the case under discussion, some of the fibers were larger and some smaller than the normal. The increase of the nuclei, however, was shown in some of the specimens as typically as in Erb's plate. He acknowledged that the fissuring might have been produced artificially by tearing. Electrically, there was greatly increased irritability of the muscles both to galvanism and to faradaism. The contractions were tonic with closure tetanus. There was normal excitability of the nerves. Clinically, the patient presented the phenomena of Thomsen's disease. It remained to be proved whether the phenomena of Thomsen's disease could be produced by disorders in which the central nervous system was involved.

Tumor of the Brain.—Dr. **Starr** presented a specimen. The patient was a woman, fifty-six years of age at the time of her death, who for two years had presented the general symptoms of tumor of the brain—vertigo, projectile vomiting, dullness of the mental faculties, and optic neuritis. During the last five months she had been examined carefully, but without revealing any evidence as to the locality of the tumor, except on one occasion, when during an attack of vertigo she fell forward and to the right. This was not a prominent symptom, and it was the only evidence pointing to cerebellar disease. The tumor was of the size of a hen's egg. It was found on the lower surface of the tentorium, simply resting upon and compressing one lobe of the cerebellum. There were no adhesions and it was unfortunate that no symptoms had pointed to its location, as it might have been removed easily. In 1878 Nothnagel had remarked that tumors of the lateral lobes of the cerebellum did not give rise to the symptoms of inco-ordination common to other cerebellar tumors.

Basedow's Disease.—Dr. J. West **Roosevelt** presented the report of a case, with that of the autopsy. The patient had been admitted into the Roosevelt Hospital on May 25, 1887. She was a widow, forty-seven years of age, a housekeeper. Both the personal and the family history were good. Two years before, she had begun to complain of palpitation, dyspnœa upon exertion, and swelling of the throat, which was largest upon the right side. She could not lie upon that side. In the course of a year the eyes began to protrude, and at the time she entered the hospital she had a profuse watery diarrhœa. The pupils were found to be equal, and the reaction to light and the accommodation were good. The lids did not follow the eyeballs. The neck measured thirteen inches around the lower thyreoid region and ten inches and a half around the upper thyreoid region. There was dysphagia to solid food. The pulse was from 100 to 120 and the respiration 38. The apex-beat was found in the fifth space, in the nipple line. There was epigastric pulsation and the area of dullness was slightly increased. There was a short systolic murmur at the apex. There was a systolic thrill over the jugulars, also a continuous venous hum. The pulmonary resonance was exaggerated. The veins of the retina pulsated, but the arteries did not. There was no tremor. The patient lived until May 31st. She suffered from watery diarrhœa and restlessness, but was not otherwise sick. In walking to the bath-room one evening she fell dead on the floor. The autopsy showed the thyreoid reduced in size, but still moderately enlarged and of a pink color. The kidneys showed a trace of fibrous tissue, but otherwise the organs were normal. There was apparently nothing abnormal in the medulla nor in the sympathetic or vagus nerves. Microscopic examination of these parts also showed nothing.

Dr. W. O. **Moore** had seen twelve cases, all in women of the average age of forty years, the youngest being thirty-one and the oldest forty-five. Ophthalmoscopic examination had simply shown enlargement and tortuosity of the blood-vessels. Great relaxation of the bowels had been present in one of the cases, as many as ten evacuations taking place in the day, which it was impossible to control. Electricity had been of no avail in these cases. All had presented the three characteristic symptoms, exophthalmia, thyreoid enlargement, and rapid action of the heart. All had shown the symptom to which von Graefe had first called attention, namely, a disturbance of the usual co-ordination of the movements of the eyeball and the upper lid, so that when the patient looked downward below the horizontal meridian the lid no longer followed the eyeball in its motion, but halted in its course. This fault in the action of the lid was supposed to be due to some defect in the orbicularis, and was not present in patients having prominent eyes from other causes. Occasionally the prominence was so great as to cause the eye to be exposed at all times, whether the patient was awake or asleep. In one case in his experience suppuration had occurred and the eye had been lost. The patient, aged forty-five years, stated that when a child she had lost the sight of the right eye by an accident, and that one year before coming under observation she had noticed commencing enlargement of the neck, dyspnœa upon exertion, and prominence of the left eye. Six months later, vision for near objects began to fail, and four weeks before coming under notice the left eye had become painful and inflamed. An examination, December 13, 1886, showed in the right eye phthisis of the bulb, total corneal leucoma, and exophthalmia so marked that, although the eyeball was atrophied, the lids were as full as in the usual healthy state. The eyelids on this side covered the globe fully when shut. In the left eye the exophthalmia was so great that the lids were retracted to their full extent and the eyeball was dislocated through the commissure of the lids. The ocular conjunctiva was chemotic and the cornea was cloudy through its whole extent. At the upper border of the cornea there was a serpiginous ulcer; in other words, there was a keratitis from loss of nutrition and exposure to the air. The pulse was irregular at 110. The patient was admitted into the Post-graduate Hospital, the outer canthus was cut, hot-water applications were made, and the parts were protected by lanolin. In spite of treatment, perforation took place, with escape of the vitreous and lens. The eye began to recede and phthisis bulbi developed. Had this case been seen earlier the speaker would have united the upper and lower lids, thus covering the eyeball. At the end of a few weeks the lids would have been reopened, when, as a rule, the exophthalmia would be found improved and the corneal trouble removed. For constitutional treatment the patient should receive digitalis, ergot, and tonics. This case was remarkable from the facts that an eye was lost by suppuration and that this loss was associated with phthisis in the other eye. The loss of an eye from exposure was so rare that the speaker knew of but ten reported cases in this country, while Wells had reported only one case.

Dr. **Starr** said that the fact that no lesion had been found in the sympathetic in Dr. Roosevelt's case did not, of course, prove anything conclusive. Ross had reported eight cases in which such lesion had been found out of twelve cases, as far back as 1882. The pathology, however, was not clear. It was difficult to understand how any one lesion could produce all the phenomena of this disease. The hypothesis accepted by Gowers was that of lesion of the vagus nucleus in the medulla. The rapid pulse would be accounted for by the loss of the inhibitory power of the vagus. It was known, too, that vaso-motor disturbances were produced by irritation of the medulla in this region. The speaker had some time since collected twenty-one cases of lesion of the medulla, in eight of which the lesion was in its upper part, in the region of the nucleus of the tenth nerve. In all those cases there were subjective flushings and objective increase of perspiration, while in the thirteen in which the lesion was in the lower part of the medulla there were no vaso-motor symptoms whatever, thus substantiating the hypothesis of the physiologists that there was a vaso-motor center in the medulla and that this center was in the neighborhood of the nucleus of the tenth nerve.

The speaker had personally observed seven cases, five in the female and two in the male. In all but one palpitation of the heart had been the first symptom. This disproved the theory that the goître was primary, and that the other symptoms were due to the pressure of the tumor upon the pneumogastric nerve. The pulse had ranged between 90 and 155. In all but one the eyes had been prominent. In six there had been nerve symptoms, in four tremors, in four von Graefe's symptom, and in six flushes. Mental disturbance had been present in one case, in which there had been delirium every night for several months, and subacute mania for several weeks. The first symptom in this case had been insomnia, which resisted treatment. The speaker supposed it to have had its origin in a condition of the vessels of the brain similar to that in the back of the eye and the thyreoid gland. Digitalis had done no good in his experience. Ergot and bromide had quieted the tremor, but no drug which he had tried had reduced the action of the heart. He had used electricity according to Benedict's recommendation, but without result. He had himself, when in Vienna, watched the treatment of three cases in which Benedict had given a good prognosis, but had failed to find any reduction of the pulse while the galvanism was being used. In his own cases he had tried every method described as galvanization of the sympathetic; he had placed the poles upon either side in front of the sterno-cleido-mastoid, behind the sterno-cleido-mastoid, and at the back of the neck and at the epigastrium, carrying the current as high as 9 milliampères, which was as strong as could be borne with a small electrode, and he had never been able to produce any retardation of the pulse. Dr. Janeway had expressed himself as having had the same experience.

Dr. A. D. **Rockwell** had met with about thirty cases of this disease, and in nine cases he had observed an approximate cure. He had employed diet, galvanism, and very full doses of digitalis, bromide of zinc, ergot, and iron. He had authentic records of his results. He believed that the cases not benefited by treatment were organic, and that those benefited were functional in origin. Those having all the cardinal symptoms were more often responsive to treatment than those in which the symptoms were more incomplete. He recalled a case in which there was a pulse of 110 reduced to 80. There was puffiness of the eyelids in that case. In the galvanic applications one pole had been placed over the eyelid, and the other behind the sterno-cleido-mastoid muscle at its upper third. In another case the pulse had ranged from 130 to 150 for several years. There was dilatation of both pupils, and there was a pulsating swelling over the solar plexus. This patient was placed upon the use of a milk diet and persistently treated for many months, when the pulse fell to below 100, and the swelling of the thyreoid and the exophthalmia had become less.

Dr. **Starr** asked whether Dr. Rockwell had observed a reduction of the number of the heart-beats while the current was being used, also whether he had ever seen paling of the face and dilatation of the pupils—phenomena which followed galvanization of the sympathetic when needles are used.

Dr. **Rockwell** replied that he had not made his observations during the application, but that subsequently such slowing had been demonstrated. Lowering of the pulse was also a very common result of general faradization.

Dr. **Jacoby** considered exophthalmic goître a rare disease. For eight or nine years he had seen in his dispensary from six to seven hundred neurological cases a year. Not more than twelve of them had been cases of exophthalmic goître. The patients had been regular in attendance and the treatment had been persistent, but he had tried every means heralded without result. Subaural galvanization had been without effect upon the color or the pulse. He considered the disease a hopeless condition. Bodily and mental rest constituted about all that could be done. He had tried faradization according to the recommendation of Vigouroux, but also without result. He thought the exophthalmia the least constant symptom. Where goître was present, one side of the neck was usually larger than the other. Some said that the right was always the larger. This he could contradict, as in a case which he had recently seen with Dr. Birdsall the enlargement had been equal upon both sides. Von Graefe's symptom was not always present. Tremor was often the first symptom. In one case in his experience tremor had existed for a year before the development of the other symptoms. At the end of the second year these had become well developed, and bronzing of the skin also was present. Vigouroux had stated that the electric resistance was diminished in all cases, and even in the commencement of the disease. This, if true, would be an important diagnostic point. In twenty cases Wolfenden had also found this lowered electrical resistance. Histories of two of these cases had been published in full. In one of the latter the resistance was only 300 ohms. It was mentioned that there was profuse sweating in this case. In the second, the resistance was 200 ohms. Of this case it was said that there were clamminess of the surface and sweating. In the other eighteen cases the resistance was from 500 to 1,300 ohms. The speaker said that the standard of resistance, however, varied according to the method used. It had been given as 300,000 to 400,000 ohms by Jolly; Gärtner gave it as 30,000 to 40,000; and here we estimated it at a third or a quarter. He had recently tested the resistance in three cases, his method having been to place the body in the circuit, the electrodes being equal in size and wet. When the galvanometer needle ceased to be deflected, the body was taken out of the circuit and a resistance coil inserted until the deflection of the needle was again brought to the same point. The amount required equaled the resistance of the body. Comparative observations were at the same time taken upon himself. The first case was that of a woman, twenty-eight years of age, with exophthalmia palpitation, and sweats. The resistances obtained were as follows:

Through the palms..................	Patient,	6,000 ohms;
	Self,	8,000 "
Through the goître....	Patient,	1,200 "
	Self,	2,400 "
Through the posterior part of the neck.	Patient,	1,400 "
	Self,	2,400 "

The second case, Dr. Birdsall's, presented goître with palpitations and exophthalmia, and the comparative observations were taken upon Dr. Birdsall and himself. The resistances obtained were as follows:

Patient, through the hands, 5,000 ohms; through the goître, 800 ohms; through the posterior part of the neck, 1,000 ohms. The measurements in himself were respectively, 5,500, 2,400, and 2,000 ohms, and in Dr. Birdsall, 8,000, 1,000, and 1,000 ohms.

In the third case the resistances were:

	Patient.	Two control subjects.
Through the hands...........	5,000 ohms.	11,000 and 10,000 ohms.
Through the thyreoid.........	1,000 ohms.	4,000 and 3,000 ohms.
Through the neck, antero-posteriorly..................	1,500 ohms.	3,000 and 3,000 ohms.

The reduction was thus scarcely a quarter, certainly not a half, and not more than would be accounted for by the maceration of the skin due to the abundant perspiration in these cases, or, as in the goître, to the fluxion of blood. The speaker failed to see how any importance could be attached to the test as a symptom.

The **President** was surprised to hear that there was any dispute in regard to the possibility of lowering the pulse by galvanism. In a case of Basedow's disease in Bellevue Hospital a pulse of 140 was found lowered fifteen or twenty beats after the current had been applied. The sedative effect of galvanism was generally admitted, though we could not say whether it was produced through the pneumogastric or through the sympathetic nerve. Dr. Starr's theory he thought incorrect. Lesion of the nucleus of the pneumogastric should give the same symptoms as division of its trunk, and this never gave rise to the phenomena of Basedow's disease. It might perhaps be said that this disease was due to lesion of the nucleus of the pneumogastric and neighboring parts. He thought that the resistance was diminished in these cases—at least slightly, perhaps 1,200 ohms. In testing he placed one electrode on the region of the seventh vertebra and the other on the sternum.

Dr. **Roosevelt** had had the same experience as Dr. Starr and Dr. Jacoby. He had used both strong and weak currents without any influence on the sympathetic nerve. He was surprised to hear digitalis recommended. He believed that digitalis was without value for heart failure except from organic disease. He had had five cases of exophthalmic goître under observation. Two of the patients had improved, but both were young anæmic girls. The measurement of electrical resistance he thought a difficult problem, because the factors varied.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of January 24, 1888.

The President, Dr. Laurence Johnson, in the Chair.

External Perineal Urethrotomy as a Preventive of Complications after Operations upon the Urethra.—Dr. Charles McBurney read a paper on this subject. Some years ago he had become convinced that so-called urethral fever was in almost or quite all cases nothing but septicæmia. Of course, he did not include under the term urethral fever the symptoms of shock. When division of a stricture was performed the best conditions were present in certain portions of the canal for rapid absorption and poisoning by septic material. It was evident from a diagram shown that in the pendulous portion of the urethra opportunity was offered for almost perfect drainage; the urine and blood, with any septic or foreign matter which they might contain, gravitated toward the meatus. At some distance from the meatus, drainage took place in the opposite direction, and, as the bladder offered resistance to the entrance of fluid from the urethra, the blood and whatever other foreign matter it might contain would bathe the deeper portion of the canal. If the operation wound was situated above the lowest portion of the canal as the patient lay upon his back, it would not be bathed with the contained fluids until they reached that level. From personal experience and observation of the practice of others, the author felt convinced that the good results following internal urethrotomy on the pendulous portion of the urethra, and of external urethrotomy on the deeper portion, were due to free drainage. He had become convinced, further, that the frequent bad results following internal urethrotomy on the deeper portion of the canal were due to want of drainage and consequent infection from urine or other infectious material. Moreover, internal urethrotomy on the deep portion of the urethra was apt to be followed by serious hæmorrhage, which, owing to its location, the surgeon was unable to control. It was very easy to open the membranous portion of the urethra on a guide, and any strictures posterior to this point could be cut with a small knife, while those anterior to it could be readily divided with the urethrotome introduced through the meatus. This was the procedure which he recommended in order to afford perfect drainage and avoid septic infection. Care should be taken not to allow closure of the small opening to take place immediately after the operation. The bladder should be completely emptied and washed out; the wound should be packed with iodoform gauze; a soft catheter should be used for two days, and in case of plastic operations for a much longer period. The author had reached the conclusion that, at all points not more than four inches and three quarters from the meatus, internal cutting operations were best, and would drain sufficiently well for safety; that, at all points back of this, cutting operations were also best, but the wounds here could not be properly drained, and were not safe without a perineal opening; and that external perineal urethrotomy was indicated in all cases in which such conditions were present in the deep urethra as might result in hæmorrhage, septicæmia, urethro-perineal abscess, or infiltration of urine.

Dr. L. B. **Bangs** said the paper expressed in many respects the views which he had himself held for some time. He attributed his success in operations on the urethra largely to securing drainage. It seemed to him, however, that there were certain cases of urethral fever which could not be explained on the supposition of sepsis. He thought there was another element to be taken into consideration—namely, the nerve element. There might, for instance, be a reflex influence communicated from the urethra to the kidneys which would so interfere with their eliminative action as to lead, so to speak, to self-poisoning. Perhaps such a condition could hardly be explained at present on a physiological basis, but further knowledge of leucomaines and ptomaines might throw additional light on it. At any rate, there were, he thought, certain cases of urethral fever which could not be explained except on the supposition of a reflex nerve influence.

Dr. Robert **Abbe** thought there was a nerve element in cases of urethral fever, for the mucous membrane lining the urethra, as everybody knew, was very sensitive. Urine was poisonous when it entered the circulation, and in some cases this might be the cause of urethral fever. He did not believe, however, that there was usually much absorption of urine after cutting operations on the urethra. That this was not the cause of urethral fever in all cases was proved by the fact that in some no urine came in contact with the operation wound between the time of operating and the development of the fever. He believed the large majority of cases of urethral contamination arose from dirty instruments. It was particularly difficult to cleanse the urethrotome thoroughly.

The PRESIDENT asked whether the effects of urinary infiltration following external traumatism to the urethra were not milder than those resulting from the sepsis of internal urethrotomy. If the reply was affirmative, he thought it supported Dr. Abbe's view that the sepsis of internal urethrotomy resulted from dirt carried from without.

Dr. MCBURNEY agreed entirely with Dr. Abbe that the origin of urethral fever or the various septic complications following operations on the urethra and bladder was dirt, but the question was, How did the dirt get there? He could not help looking upon the mixture of urine, mucus, and pus found in the neighborhood of all strictures as one of the most obvious and most prolific sources of urethral fever or septicæmia. He regarded a case narrated by Dr. Bangs as evidence of a nerve element in the production of urethral fever as also one due to septic poison entering at points where the mucous membrane had been deprived of its epithelium.

Dr. F. N. OTIS thought urethral fever was more the result of irritation than of septic infection. The freer operation wounds were kept from septic matter the better would be the results; yet he did not believe sepsis was the cause of urethral fever. He was disposed to think there was a predisposition to such fever, and that this predisposition had more to do with the case than anything else. In a large proportion of cases patients could be operated upon by internal urethrotomy without any special precautions, and have no chills or urethral fever whatever. Continued contact of urine with the wound tended to produce fever, and consequently he believed in thorough drainage. This was favored by dividing the stricture on the superior wall of the urethra and by complete division of the stricture tissue. He saw urethral fever not oftener than once in fifty cases of urethrotomy. When the stricture was situated more than five inches from the meatus, external urethrotomy should be done in order to secure drainage, and also to control hæmorrhage. The operation was almost free from danger. He had never lost a patient from internal urethrotomy on the anterior portion of the urethra.

Meeting of February 27, 1888.

The Pauper Insane.—The meeting adopted a resolution, offered by Dr. SAMUEL SEXTON, approving of the bill presented to the State Legislature by the State Charities Aid Association, referring to State care of the pauper insane.

Leprosy in the United States, and its Relation to the State.—Dr. CHARLES W. ALLEN read a paper on this subject which will be published in a subsequent issue.

Dr. G. H. FOX believed, from what he had seen of leprosy, that it was contagious, although he could not prove it; he also believed that it was hereditary in many instances, yet this was difficult to establish. It was his opinion, although he would not attempt to prove the fact, that leprosy was much like syphilis; that it was not alone contagious, but also hereditary. The question arose, Were we justified in allowing the fear of leprosy to spread throughout the country? He did not believe there was any basis for such fear. If the disease was contagious, it was so only in very slight degree, and the segregation of the few patients we had here he believed to be uncalled for. But he would prevent the landing of immigrants affected with leprosy. There were probably more lepers in New York than was generally supposed. He did not regard leprosy as an incurable disease. A letter just received from one of his patients, who had taken chaulmoogra oil, reported that he was still well, except for a feeling of numbness in the hands. But the treatment would be rendered practically hopeless by putting all lepers together and depriving them of their liberty.

Dr. P. A. MORROW said that, while modern science had discovered the pathogenetic agent of leprosy, we had scarcely advanced at all regarding the method of its propagation beyond what had been known in olden times. We did not know how the germs gained access to the system, whether through contact with abraded surfaces, whether the germs were in the air, in articles of clothing, in the soil, or in the water. His own impression was that leprosy was contagious and also transmissible by inheritance. Dr. Allen had presented many cases in proof of the contagiousness of leprosy, but there were also many cases which some would accept as proof of its non-contagiousness. Persons who had associated with lepers most intimately for many years, even in married life, had escaped the disease. There had not been a single case of spread of the disease in Charity Hospital, where other patients had associated freely with the lepers who had entered that institution. But these and other facts did not prove to his mind that leprosy was not contagious; they proved simply that it was not readily contagious; that the contagion operated in a very mild way. For this reason he did not believe we need fear the disease in this country, and he was opposed to segregating these patients. The manner in which leprosy had behaved in the Sandwich Islands could not be taken as a basis of comparison for this country, for the conditions were very different. The segregation of lepers in some countries, such as Norway, had led to the belief that its decrease had been due to this cause alone, but the fact was that in Norway isolation of these patients had not been rigorously practiced. Those in institutions had been allowed to go out and mingle with the healthy. While we should not have a false sense of security, it was equally important that no alarm should be sounded when there was no occasion for it. In this country he thought sanitary police regulations were not necessary in order to check what the reader of the paper thought to be a growing evil.

Dr. D. B. DELAVAN thought leprosy was not so harmless a disease as some of the speakers and others had implied. In discussing the question of segregation, three questions might be asked: 1. Was leprosy communicable? 2. If it was communicable, was it so in equal degree at all times? 3. What had been the result of segregation? While in general it might not be very contagious, yet its history in Europe during the middle ages was very instructive. The disease then broke out in some corner and swept over the whole of Europe. Had we, he asked, proof that at some time a similar epidemic would not occur in this country? History went to show that where leprosy had existed segregation had been found desirable. There were enough lepers in the United States to fully justify calling the attention of the Government to the disease. Regarding treatment, there was no question of the benefit derived from chaulmoogra oil.

Dr. KOPLIK queried whether opening up the lymph channels in a surgical operation for cosmetic effects might not be followed by a more rapid progress of the disease.

A Communication from the Georgia Medical Society was read, which led to the introduction and adoption of the following: *Resolved*, That the Medical Society of the County of New York would urge upon Congress that in the cause of humanity the import duty should be removed from all medicines, medical and surgical appliances, and everything used in the treatment and diagnosis of disease.

Book Notices.

Doctor and Patient. By S. Weir Mitchell, M. D., LL. D. Harv., Member of the United States National Academy of Sciences, President of the College of Physicians of Philadelphia, etc. Philadelphia: J. B. Lippincott Company, 1888. Pp. 5 to 177. [Price, $1.50.]

Whatever Dr. Mitchell writes is worth the reading, and the present example of his pleasant way of propounding serious truths is no exception to the rule which has hitherto guided his pen. It hardly falls within our province to review a book avowedly written for the laity rather than for professional readers, but we can at least cordially commend his lessons to those for whom they are intended, and we may add that not a few in our own ranks will derive instruction as well as entertainment from his chapters on the deportment of the ideal doctor in sickness and convalescence, and on the management of "nervousness." The mother who fails to mark and inwardly digest the author's excellent advice touching the moral prophylaxis of functional nervous disorders neglects that which may be of infinite importance to the future career of her children, especially if they are daughters.

Practical Lessons in Nursing. Fever Nursing: Designed for the Use of Professional and other Nurses, and especially as a Text-book for Nurses in Training. By J. C. Wilson, A. M., M. D., Visiting Physician to the Philadelphia Hospital and to the Hospital of the Jefferson College, etc. Philadelphia: J. B. Lippincott Company, 1888. Pp. viii-11 to 210. [Price, $1.]

This book may be said to contain either too much or too little, according to the point of view from which it is regarded. If it is deemed desirable to teach nurses to undertake for themselves the diagnosis and treatment of disease, or to criticise the opinions and practice of the physician in attendance, the "Lessons" are hardly elaborate enough; if, on the other hand, the nurse's function is to carry out skillfully the directions of the doctor under whom she is employed, much superfluous matter is added to the good instruction given her in the latter capacity. It seems to us of doubtful propriety, in the present state of our knowledge, to give her dogmatic comparisons of the germicidal value of different disinfectants, or of methods of fumigating rooms or purifying privy-vaults. The author's personal opinions concerning the pathogeny and proper treatment of various febrile affections (including, among others, relapsing fever, dengue, yellow fever, and influenza), however interesting for discussion before a medical society, appear calculated to put the medical attendant in a position subordinate to that of the nurse, and to stimulate her conceit to override his decisions. On the whole, although the work may be all that could be desired for the tuition of nurses who are to serve under the author himself, it is not unlikely to detract from the usefulness of those who may be ancillary to physicians who are unfortunate enough to differ with him in therapeutic tenets.

It is probably by a typographical error that the christening of diphtheria (p. 193) is dated thirty years too late, as the author is undoubtedly familiar with Bretonneau's memoirs on the subject.

BOOKS AND PAMPHLETS RECEIVED.

Prescription Writing. Designed for the Use of Medical Students who have never studied Latin. By Frederic Henry Gerrish, A. M., M. D., Professor of Anatomy, and formerly Professor of Materia Medica and Therapeutics, in Bowdoin College, etc. Seventh and Revised Edition. Portland: Loring, Short, and Harmen, 1888. Pp. 6-7 to 55. [Price, 50 cents.]

The Medical Jurisprudence of Inebriety. By Joseph Parrish, M. D., Burlington, N. J. [Reprinted from the "Journal of Inebriety."]

Seventy-fourth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Asylum, 1887.

Obstetric Synopsis. By John S. Stewart, M. D., Demonstrator of Obstetrics and Chief Assistant in the Gynæcological Clinic of the Medico-chirurgical College of Philadelphia. Illustrated. Philadelphia: F. A. Davis, 1888. Pp. x-202. [Physicians' and Students' Ready Reference Series.]

Comparative Data from 2,000 Indian Crania in the United States Army Medical Museum. By R. W. Shufeldt, M. D., C. M. Z. S., Captain, Medical Corps, U. S. Army, etc. [Reprinted from the "Journal of Anatomy and Physiology."]

The Hygiene of the Skin, or the Art of Preventing Skin Diseases. By A. Ravogli, M. D. Cincinnati: Central Medical Publishing Co., 1888. Pp. 12-13 to 399.

Congenital Club-foot: Its Treatment by Open Incision and Immediate Rectification. By Charles N. Dixon Jones, M. D., etc. [Reprinted from the "Medical News."]

Proceedings of the National Conference of State Boards of Health at the Fourth Annual Meeting held at Washington, D. C., September 7, 1887. [Published by the State Board of Health of Michigan.]

Lyssa and the Pasteur Fiasco. By N. E. Brill, A. M., M. D., New York. [Reprinted from the "Journal of Comparative Medicine and Surgery."]

The Lomb Prize Essays: No. 1—Healthy Homes and Foods for the Working Classes. By Victor C. Vaughan, M. D., Ph. D., Ann Arbor, Mich. No. 2—The Sanitary Conditions and Necessities of Schoolhouses and School Life. By D. F. Lincoln, M. D., Boston, Mass. No. 3—Disinfection and Individual Prophylaxis against Infectious Diseases. By George M. Sternberg, M. D., Surgeon, U. S. Army. No. 4—The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the best Means and Appliances for preventing and avoiding them. By George H. Ireland, Springfield, Mass. [Published by the American Public Health Association.]

Reports on the Progress of Medicine.

SURGERY.

By MATTHIAS L. FOSTER, M. D.

Œsophagotomy for Foreign Bodies. — Fischer ("Deutsche Zeitschrift f. Chir."; "Ctrlbl. f. Chir.," 1887, No. 52) furnishes a table of eighty cases in which œsophagotomy has been performed for the removal of foreign bodies. According to this table, the mortality of the operation is 20 per cent., but the statistics of the causes of death show that the fatal issue is oftener due to too great delay in operating than to the operation. Thus, in the sixteen fatal cases, seven patients died from ulceration of the œsophagus and secondary septic infection, six from exhaustion, one from acute sepsis, one from hæmorrhage, and one from pulmonary phthisis. The ulceration from pressure and the gangrene of the œsophagus may appear within four days after the swallowing of the foreign body and may cause emphysema of the neck, inflammatory swellings of the neck, mediastinal abscess, or pleuritis. The fast enforced by the presence of the foreign body in the œsophagus and its hindrance to swallowing may render children very feeble and almost pulseless in forty-eight hours. A man, forty-four years old, was so exhausted at the end of an eight days' enforced fast that the face was cyanotic, the extremities were cold, and the pulse was small and threadlike. Therefore the indication is, after failure of milder means to remove the foreign body, to perform œsophagotomy before the end of the following day. It should be performed immediately if the foreign body has been in the œsophagus several days before the patient comes under observation and ordinary means of removal fail, and also when the nature of the foreign body is such as to make its extraction or its passage into the stomach dangerous. Recovery is usually complete. In only two cases did stricture with communication between the œsophagus and trachea result. In very few cases did changes in the voice, hoarseness and cough, or symptoms of injury of the branches of the recurrent laryngeal appear.

After the first integumental incision, Fischer tears through the tissues and separates the parts with broad blunt retractors until he exposes the lateral border of the thyreoid gland, which he employs as his chief landmark. If the gland is swollen, it may render the exposure of the œsophagus quite difficult. If the foreign body can not be felt so as to be used as a guide, he introduces an œsophageal bougie of gum or metal upon which to make the incision through the wall of the œsophagus. Sometimes it is impossible to remove the foreign body through the wound. In these cases it is usually necessary to push the foreign body down into the stomach. Alsberg records a case in which the foreign body could be shoved upward and extracted through the mouth. In uncomplicated cases he sutures the mucous membrane and then closes the wound in the wall of the œsophagus by sutures passing through its entire thickness. In cases of perforation or gangrene of the œsophagus with suppuration and infiltration, the wound is left open. In either case the patient can swallow small quantities of fluid nourishment within a few hours after the operation, so Fischer does not ordinarily employ the stomach-tube for feeding purposes in these cases, but restricts its use to those in which the act of swallowing is difficult or painful.

Intussusception.—Schmidt ("Ctrlbl. f. Chir.," No. 1, 1888) urges that in cases of intussusception irreducible by other means, laparotomy should be performed within the first forty-eight hours, even though marked symptoms of intestinal obstruction have not appeared. In a large proportion of cases these severe symptoms are nearly or quite absent, although the case passes on to a fatal termination. Schmidt illustrates this by citing a case from his own practice: A girl, ten years old, was seized one evening, after eating fruit, with pain in the abdomen and vomiting. She had copious evacuations of the bowels on the first, third, fourth, and fifth days. Vomiting was only occasional and not stercoraceous until the fifth day. At the same time the other symptoms caused the diagnosis of intussusception to be made on the second day. Operative interference was delayed on account of the copious stools until it was of no value, and the patient died on the seventh day.

Resection of the Wrist Joint.—Gangolphe ("Revue de chir.," Sept., 1887) reports fifteen cases of resection for fungous osteo-arthritis with excellent results. He removes the mass, applies the actual cautery to the surface, dresses it with iodoform gauze, and fixes it with a plaster-of-Paris splint. In children, scraping and cauterization may suffice. Resection should not be attempted if the patient's general condition is not tolerably good, as amputation is less severe, and is preferable in cases where there is profound cachexia or persistent fever.

Fæcal Accumulation.—Worrall ("Australasian Med. Gaz.," Dec., 1887) reports a case of fæcal accumulation, in a girl thirteen years of age, which presented the appearance of a solid tumor, hard and nodulated, distending and nearly filling the abdomen. The rapid growth and stony hardness of the tumor, together with the cachectic appearance of the patient, seemed to indicate a malignant growth, but laparotomy revealed the true condition of affairs. The patient recovered.

Cancer of the Stomach.—Bernays ("Ann. of Surg.," Dec., 1887) suggests, as a substitute for Wölfler's operation of gastro-enterostomy in cases of pyloric cancer with stenosis which come under observation too late for the successful performance of pylorectomy, the simpler operation of curetting the cancer through an opening made for the purpose in the stomach. It is only palliative, but in this respect Wölfler's operation is open to the same objection while it is more difficult to perform. Great relief and general improvement are reported in the two patients upon whom Bernays has operated.

The first incision is made parallel to the border of the ribs, beginning an inch and a half to the left of the linea alba and an inch below the ensiform appendix, and extending three inches and a half to the left, down to the muscles. These are torn through rather than cut, in order to leave intact as much muscular tissue as possible, down to the peritonæum, which is then incised. The external surface of the stomach is then explored with the hand, and a careful choice is made of that part of the stomach-wall which will most easily adapt itself to the incision. This portion is drawn up into the wound, after suturing the parietal peritonæum to the lips, secured, and opened in the usual manner. Before incising the wall of the stomach he washes the wound with a five-per-cent. solution of carbolic acid for its slightly cauterizing effect. The stomach is then washed out and the growth curetted away. Cold water poured into the stomach contracts it when necessary, so as to bring all parts within reach of the finger, and controls the hæmorrhage, which is considerable during the operation. As several operations will probably be required, the opening is left patent, but if a benign tumor were found, it could be removed, and the stomach closed in the usual manner after gastrotomy.

The Antibacterial Action of Iodoform.—Jeffries ("Am. Jour. of the Med. Sci.," Jan., 1888) briefly reviews the literature which has appeared on this subject since the publication of the investigations of Heyn and Roosing, a brief review of which appeared in the Journal for June 25, 1887, confirms their observations and those of Lübbert, and advances the point that iodoform, though not a germicide, does retard the growth of bacteria. The experiments of Lübbert consisted in injecting into rabbits mixtures of *Staphylococcus pyogenes aureus* and iodoform, the results being the same as in the control experiments in which iodoform was omitted. Sattler saturated silk threads with *Staphylococcus pyogenes aureus*, dusted them with iodoform, and then laid them on gelatin-plates. The growth of the coccus was slower than from threads not dusted with iodoform. This appears to be due to the physical action of iodoform in repelling moisture, keeping the threads dry, and separating the bacteria from the nutritive material.

That iodoform retards the growth of bacteria Jeffries has shown by infecting tubes of bouillon, some containing five per cent of iodoform, with *Staphylococcus pyogenes aureus*, or the fluorescing, putrefying bacillus. Agar-agar plate cultivations made from dilute solutions of these showed that the number of bacteria in the tubes containing the iodoform was decidedly less than in the others. Comparison of cultivations made from ulcers of the leg before and after the use of iodoform showed a diminished number after its use. This result was probably due partly to the direct action of the iodoform and partly to the drying of the surface of the wound.

The Radical Cure of Hernia.—At the fifty-fifth annual meeting of the British Medical Association papers were read by Banks, Macewen, and Ball on the subject of hernia, each describing and advocating his own peculiar method of operating for the radical cure ("Brit. Med. Jour.," Dec. 10, 1887). The methods of Banks and Macewen have been so frequently described that details are unnecessary. Banks ligatures the sac as high up the canal as possible and removes it, and, in inguinal hernia, brings the pillars of the ring together with silver wire. This he does not with the intention of closing the inguinal ring, attempts to do which he pronounces theoretical and useless, but only to hold the parts together temporarily, while the wound heals, to prevent danger from coughing or straining. From a table of 106 cases we find that he has had two deaths after operations on fifty-two moderate-sized non-strangulated hernias, four deaths in sixteen cases of very large non-strangulated hernias, and three deaths in thirty-eight cases of strangulation. Of sixty-six cases of moderate-sized and strangulated hernias which could be traced after operation, forty-four were successful, seven partially successful, or probably successful, and fourteen failures. Nine cases of the very large hernias could be traced, six being successes and three failures. He considers that operative procedures are seldom required in children, that no person should be subjected to operation who can comfortably wear a truss which keeps the bowels in position, and that after the operation a support should be worn.

Macewen exhibited a table of eighty-one cases in which he had performed the operation which bears his name, with no deaths and only one failure. The principle of the operation is to convert the sac into a pad, placed on the peritoneal surface of the internal ring, to act as a boss to turn away the intestinal wave from the opening. He then closes the internal ring by a double suture, inserted in such a manner as to imitate, as far as possible, the valvular form of the normal canal. For this purpose he deems his hernia needles indispensable. Very few of his patients needed to wear a support, which usually he does not recommend. He considers that a plug left in the canal tends to widen rather than obliterate it.

On the contrary, Ball employs torsion of the sac, and its retention in the canal to act as a plug. He isolates the sac from the cord up to the internal ring, and loosens the peritonæum from its attachments for a little distance from the opening. After determining the sac to be empty, he grasps the neck with a broad forceps, and twists it until it is felt to be quite tight, the left forefinger being employed to keep the upper portion of the neck free. Usually four or five complete revolutions suffice. A stout catgut ligature is then tied tightly about the twisted sac as high up as possible. Two silk sutures are then passed through the skin, about an inch from the outer margin of the wound, through the outer pillar of the ring, through the twisted sac in front of the ligature, through the inner pillar of the ring, and out through the skin. The sac is then cut off in front of the sutures. This torsion throws the peritonæum into folds, radiating from the internal ring, at which there is a prominence rather than a depression. During the last four years he has performed this operation twenty-two times, with no deaths. In three cases a support had to be worn on account of bulging at the inguinal ring. He deprecates the use of a truss after the operation, unless symptoms of recurrence appear.

Suture of a Divided Ulnar Nerve.—Jencken (*ibid.*) reports a case of unusually rapid restoration of function after suture of the ulnar nerve seven months after its division. Trophic changes had taken place in the parts supplied by the nerve, and anæsthesia was complete when the patient came under observation. The divided ends were found an inch apart, and could be secured in apposition only by forcibly flexing the wrist. Sensation had in great part returned four days afterward, and was perfect in a fortnight. The skin and muscles immediately began to recuperate, and the case resulted in a perfect cure.

[This very rapid return of function recalls the suggestion of Mr. Bowlby last year that the degeneration of the peripheral portion of a divided nerve is followed by a regeneration which progresses slowly as long as the ends are separated, to terminate, probably, in a final degeneration. But if during this period of slow regeneration the ends of the nerve are brought in apposition, the peripheral portion is united to the centers of nutrition, and regeneration may become very rapid.]

Hydrocele in the Female.—Osborn ("Brit. Med. Jour.," Dec. 24, 1887) describes hydrocele as occurring in the female in two situations, in the femoral canal and in the canal of Nuck, the latter being the more common. The diagnosis is not easy and the condition may be mistaken for irreducible, and, when inflamed, for strangulated hernia. The only trustworthy diagnostic point is transparency by transmitted light, which is frequently not easily determined. In doubtful cases a small portion of the fluid should be aspirated with a hypodermic syringe. The fluid is pale-yellow serum. The treatment advised is the application of a truss. When more active measures are indicated the hydrocele should be tapped, the walls of the cyst rubbed together, and pressure maintained by means of a truss or a pad and bandage. When this does not suffice a cure is usually obtained by injecting iodine into the sac. Tapping of the hydrocele should always be done at the patient's home.

[This treatment does not seem devoid of danger when we consider the difficulty with which a diagnosis from hernia is attended, and that, if by mistake a truss should be applied to the latter, great and irremediable mischief might ensue. The simultaneous presence of a hydrocele and hernia seems to be a possible condition, though not mentioned, and one which might present even more difficulties in the way of diagnosis. But in such a case the application of the treatment advocated might act disastrously to the patient. While treatment by incision is subject to the objections that it will confine the patient to her bed for a few days and that it is "treatment by the knife," it has the advantages of making the diagnosis certain and of being correct whether the original diagnosis was correct or not.]

Vesical Calculus.—Freyer (*ibid.*) contributes to the literature on this subject a series of one hundred cases of operation for stone in the bladder without a death. This includes sixteen cases of litholapaxy in children from three and a half to fifteen years of age, an operation which he considers preferable to lithotomy when practicable. He notes that the capacity of the urethra in patients of the same age varies more in children than in adults; that there is more danger of leaving a fragment in children than in adults, because the stream passing through a small cannula has not the same force as when sent through a larger one, and therefore the fragments are not carried with the same certainty toward the eye of the cannula; that in children after division of the meatus the first two inches are the narrowest and the most difficult part through which to pass the lithotrite; that reintroduction of instruments tightly fitting the urethra at first may be difficult on account of congestion in the urethral mucous membrane near the meatus, a condition he has noticed to a slight extent in young adults, but never in old patients; that a lithotrite sometimes can not be introduced, although a larger sound may be, because of the curve approaching too nearly a right angle; and that no force should be employed during the introduction of the instrument.

Excision of the Tongue.—Barwell ("Lancet," Dec. 31, 1887) describes the following method of excision of the tongue, which he recommends as almost bloodless and leaving a painless stump:

"Strictly in and along the middle line an opening is made about one third of an inch long, immediately in front of the hyoid bone through the raphe of the mylo-hyoid. The genio-hyoid and genio-hyoglossus muscles are separated with the handle of the scalpel until the deep surface of the mucous membrane forming the floor of the mouth is reached. By means of Liston's needles carried under the mucous membrane to, or even beyond, the last molar teeth, threads are passed on each side into the buccal cavity, which in their turn draw flexible wire twist, first into then out of the mouth, in such wise as to surround the base of the tongue as far back as one will. An écraseur working with this wire severs that part of the organ. Then the loop of another écraseur is passed between the teeth, pressed well down on the first incision, and divides the structures beneath the tongue."

Miscellany.

The Carnegie Laboratory.—Mr. Andrew Carnegie has just given additionally six thousand dollars to the Carnegie laboratory for the purchase of scientific instruments and apparatus to meet the requirements of the institution for the coming year. This sum, together with the income derived from third-year students, who are now obliged to take a course in the laboratory as a requirement for graduation, will amply provide for all the current expenses of this institution, and at the same time afford excellent advantages to any who may desire to pursue any special work in experimental pathology or bacteriology. The result of the work accomplished during the past scholastic year is most gratifying to those interested in the elevation of the standard of medical education. The entire graduating class has been taught normal histology, and as much of pathological anatomy as the limited time at the disposal of the three instructors permitted. There have been mounted nearly three thousand microscopical specimens for the permanent use of the section classes, besides a large number which have been mounted by special students in the laboratory. There have been also arranged, classified, and mounted nearly five hundred specimens in alcohol for the purpose of illustrating disease in the didactic lectures upon internal medicine and surgical pathology. A most interesting and unique collection of tumors has been placed in the museum connected with the laboratory for class demonstration. All this work accomplished during the past year is permanent in its character, and is a valuable contribution to the laboratory with a view to extending its wide field of usefulness.

A systematic series of experiments have been set on foot in regard to the value of disinfectants for the benefit of the Board of Health of New York. A most striking illustration of the usefulness of such a laboratory to the community was manifested during the past year when a steamer landed at quarantine with supposed cases of cholera on board. At the request of the Board of Health there were made in the Carnegie laboratory experiments which proved beyond all doubt that the disease was genuine Asiatic cholera. It was in this way by the scientific discovery of the Koch bacillus of cholera that the true nature of the disease was disclosed. It is not at all an exaggeration to state that this work in bacteriology on the cholera germ enabled the Board of Health to appreciate the real danger of the situation and thereby prevent an epidemic of cholera in this city and country that might have involved untold suffering and loss of life. The like experiments conducted in reference to cases of sporadic cholera during the past year are also of great importance to the city. With such scientific institutions the country is protected from the visitations of pestilence and epidemics which in former times caused such great loss of human life. The Carnegie Laboratory, the Alumni Laboratory of the College of Physicians and Surgeons, and the Loomis Laboratory are institutions founded upon right principles, and the great advances which in the future will characterize American medicine must take place as a result of the researches conducted in these workshops of science.

The New York Academy of Medicine.—To aid in completing the fund necessary for the erection of a new building, the Subscription Committee has issued the following circular:

"The New York Academy of Medicine is an incorporated institution, forty years old. Its object is the cultivation of medical science. This is accomplished by lectures and discussions in the stated meetings of the Academy and its numerous sections; by maintaining reading-rooms, which furnish nearly all the medical journals of the world, and by collecting a library containing at present 37,000 volumes and 20,000 pamphlets, which are free both to the medical profession and to the public.

"The number of its Fellows is at present over five hundred. They are elected from among those who have practiced medicine in New York city, or its vicinity, three or more years.

"By careful management and voluntary contributions of its members and others, the Academy has accumulated some property. It owns its building, No. 12 West Thirty-first Street, free of debt. That, however, is too small for its membership, its many and various meetings, and its steadily increasing library. The house not being fire-proof, the library is in constant danger.

"A large, fire-proof building is, therefore, an immediate necessity. In recognition of this fact, Mrs. Anna Woerishoffer has given to the Academy the sum of $25,000, Dr. Edward L. Beadle bequeathed $5,000, and Mrs. Celine B. Hosack, widow of Dr. Alexander Hosack, $70,000, for the purpose of erecting a new building. More funds, however, are required, and therefore we appeal to both the profession and the public to aid us.

"Some of the grounds on which we base this request are the following:

"The Academy is not connected with any school or college. It is self-supporting, and carried on in the interest of the whole profession. There are no fees nor emoluments of a private or individual nature. It is not supported nor subsidized by the State or municipality. Its aim is the elevation of the profession to a higher scientific standard.

"On the knowledge, wisdom, and public spirit of the medical profession, the hygienic and sanitary safety of the country is dependent. If our great city and the republic will be better protected in future than heretofore against the inroads of cholera and other infectious diseases, that result will be due in great part to the efforts of the New York Academy of Medicine.

"Thus we appeal to the wise generosity of the public, and request ontributions large enough to enable us to accomplish the purposes for which the Academy was founded. The sum required in addition to our present means is $250,000.

"Will not generous and patriotic New Yorkers feel a just pride in eeing our city possess another monument devoted to science; estabshed on a firm and liberal foundation; a protection, an honor, and a redit to its citizens, emulating, if not surpassing, the great institutions f a like character in the old capitals of Europe?

"In this conviction we confidently hope that a fund will soon be raised sufficient to purchase a proper site and to erect upon it a building specially adapted to our society, and which, for generations to come, will be sufficient for its purposes. This building once paid for, there will be no further occasion for us or our successors to call upon the liberality of our fellow-citizens.

"Contributions and correspondence may be addressed to members of the Committee at their residences, or to the care of the New York Academy of Medicine, 12 West Thirty-first Street, New York."

The Committee consists of Dr. Abraham Jacobi, Chairman; Dr. Joseph E. Janvrin, Treasurer; Dr. Arthur M. Jacobus, Secretary; Dr. Cornelius R. Agnew, Dr. Fordyce Barker, Dr. Joseph D. Bryant, Dr. Thomas H. Burchard, Dr. Frederick A. Castle, Dr. William H. Draper, Dr. Everett Herrick, Dr. Alexander S. Hunter, Dr. Andrew H. Smith, Dr. T. Gaillard Thomas, Dr. Laurence Johnson, Dr. Herman Knapp, Dr. Charles Carroll Lee, Dr. Malcolm McLean, Dr. Willard Parker, Dr. Edward Sprague Peck, Dr. George A. Peters, Dr. William M. Polk, Dr. D. B. St. John Roosa, Dr. George F. Shrady, Dr. Alexander J. C. Skene, Dr. Gouverneur M. Smith, Dr. Alfred L. Loomis, Dr. Leonard Weber, Dr. Robert F. Weir, and Dr. W. Gill Wylie.

The following-named gentlemen fully agree with the objects of the foregoing circular, and have expressed their willingness to serve on the Subscription Committee: Mr. James C. Bayles, Mr. James M. Brown, Mr. Charles Coudert, Mr. Andrew H. Green, Mr. Abram S. Hewitt, Mr. D. Willis James, Mr. John S. Kennedy, Mr. Robert Maclay, Mr. Jacob H. Schiff, Mr. Henry Villard, and Mr. J. Pierpont Morgan.

Rhachitis.—Schwarz ("Medizinische Jahrbücher," 1887) has demonstrated, by an examination of 500 children within an hour after birth at the lying-in hospital in Vienna, that the signs of rhachitis can usually be found at that early period, showing the disease to be, at least usually, intra-uterine in its commencement. To a very large extent he confirms the usual impressions regarding ætiology and pathology. Of the 500 children examined, 97 were without sign of this disease, 188 had well-marked rhachitic rosaries together with rhachitic changes of the cranial bones, varying from an abnormal weakness along the borders of the sagittal suture to an almost complete defect of ossification of the cranium, 155 had well-marked rhachitic rosaries without the changes in the cranial bones, 36 had the changes in the cranial bones alone, and 24 presented only slight swellings at the union of the bones and cartilages of the ribs. Of the children born in the seventh lunar month, 14 were rhachitic, 1 normal; in the eighth lunar month, 27 rhachitic, 4 normal; in the ninth lunar month, 50 rhachitic, 12 normal. Fifteen of the mothers of rhachitic children presented signs of having suffered from a high grade of rhachitis. Of 6 cases of twins, in 3 one child was normal, while the other was rhachitic; in the others both children were rhachitic. His conclusion is that every child should be examined as soon after birth as practicable, and, if any signs of rhachitis are found to be present, active treatment should be immediately instituted.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 23d:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 3d corresponded to an annual rate of 21·5 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Sunderland, viz., 13·4, and the highest in Blackburn, viz., 34·2 in a thousand. Small-pox caused 21 deaths in Sheffield, 1 in Leeds, 1 in Nottingham, 1 in Manchester, and 1 in Bristol.

London.—One thousand seven hundred and ninety-four deaths were registered during the week, including 15 from measles; scarlet fever, 27; diphtheria, 24; whooping-cough, 94; enteric fever, 15; diarrhœa and dysentery, 10. Diseases of the respiratory organs caused 188 deaths; different forms of violence, 65; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 21·9 in a thousand. In greater London 1,905 deaths were registered, corresponding to an annual rate of 18 in a thousand of the population. In the "outer ring" 9 deaths from diphtheria; whooping-cough, 43; and fever, 3, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending March 3d in the sixteen principal town districts of Ireland was 35·3 in a thousand of the population. The lowest rate was recorded in Londonderry, viz., 21·4, and the highest in Limerick, viz., 44·5 in a thousand. In Dublin 230 deaths were registered, including 1 from small-pox; diphtheria, 3; measles, 3; whooping-cough, 6; scarlet fever, 5; and enteric fever, 5.

Scotland.—The deaths registered in eight principal towns during the week ending March 3d corresponded to an annual rate of 23·4 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12·2, and the highest in Glasgow, viz., 27·5 in a thousand. The aggregate number of deaths registered from all causes was 592, including 14 from measles; diphtheria, 9; scarlet fever, 6; whooping-cough, 28; fever, 2; and diarrhœa, 7.

Santiago de Cuba.—The sanitary inspector reports for the week ending March 10, 1888, that yellow fever has totally disappeared from the military hospital, and no cases of it are reported in the town. Small-pox also has completely disappeared.

Havana.—One death from yellow fever and 29 from small-pox are reported for the week ending March 10, 1888.

Callao.—The United States consul, in his dispatch dated February 21, 1888, states that "the last official report respecting cholera in Chili, dated at Valparaiso, the 18th instant, is not encouraging. It states 'cholera north and south does not decline. Cases reported at Pisagua. Valparaiso, new cases, 21; deaths, 4; Santiago, new cases, 38; deaths, 10.' Pisagua is a port just north of Iquique, and dangerously near to Arica, from whence the distance to the Peruvian boundary at Ilo is insignificant. At Ilo a sanitary cordon is established, but no confidence is entertained regarding its efficiency. The sanitary board here is now called upon to renew its endeavors to prevent all communication with the infected districts. The public health of Lima and Callao continues to be satisfactory. A cable message has just been received by the Government at Lima from the consul at Iquique, stating that no cases of cholera have appeared in the department of Tarapaca, in which are comprised Iquique and Pisagua."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	March 3.	2,260,945	1,200	..	...	6	....	13	5	48
Glasgow	March 3.	545,678	278	..	....	....	....	....	4	4
Warsaw	February 25.	439,174	175	..	....	9	....	...	2	2
Calcutta	February 4.	433,219	262	29	....	1	....	....	....	....
Rome	January 28.	382,973	250	..	....	5	....	3	....	2
Copenhagen	February 21.	300,000	114	..	...	....	....	1	11	...
Munich	February 18.	275,000	153	..	....	1	....	....	2	4
Edinburgh	February 25.	262,733	106	..	....	....	....	....	....	2
Edinburgh	March 3.	262,733	106	..	....	....	...	1	1	1
Palermo	March 3.	250,000	95	..	....	....	...	1	2	....
Belfast	February 25.	224,422	153	..	...	....	1	1	2	....
Belfast	March 3.	224,422	170	..	....	...	....	....	1	2
Genoa	March 3.	179,337	117	..	....	5	....	....	....	3
Leipsic	March 3.	170,000	83	..	....	....	....	2	4	6
Trieste	February 25.	154,500	95	..	....	5	....	....	2	....
Toronto	March 10.	130,000	42	..	....	....	....	2	....	....
Stuttgart	March 3.	125,510	48	..	....	....	....	....	....	3
Havre	February 25.	112,074	92	..	....	5	....	1	....	1
Havre	March 3.	112,074	116	..	....	8	....	3	....	1
Barmen	February 25.	109,000	34	..	..	....	1	....	....	1
Barmen	March 3.	109,000	45	..	....	....	1	....	....	3
Mayence	February 25.	65,701	30	..	....	....	....	....	....	1
Merida	February 29.	48,711	39	..	....	....	1	....	....	....
Cienfuegos	March 5.	35,464	30	..	....	14	...	1	....	....
Cienfuegos	March 12.	35,464	37	..	1	24	....	....	....	....
Gibraltar	February 26.	23,681	8	..	....	....	....	....	1	1
Sagua la Grande.	March 3.	15,605	14	..	....	7	....	....	....	....

UNITED STATES.

Key West.—The medical officer in charge of the Marine-Hospital Service reports, under date of March 15th, that "there are no cases of small-pox upon the island at this date, and, as no new cases have developed for the past week, it is hoped the disease has been eradicated."

San Francisco—Small-pox.—The board of health, under date of the 15th instant, declared small-pox to be no longer epidemic in this city, only 16 cases and 1 death having been reported since March 1st.

The Health of Boston.—During the week ending Saturday, March 24th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 22 cases and 6 deaths; scarlet fever, 16 cases and 2 deaths; typhoid fever, 2 cases and 2 deaths; measles, 49 cases and 1 death. There were also 24 deaths from consumption, 22 from pneumonia, 1 from whooping-cough, 8 from heart disease, 13 from bronchitis, and 2 from marasmus. The total number of deaths was 182, against 189 in the corresponding week last year.

ANSWERS TO CORRESPONDENTS.

No. 166.—See the account of Dr. Dana's case, and the discussion in the proceedings of the New York Neurological Society, meeting of March 5th.

No. 167.—The correct spelling is erythrophlœine (not erythrophlæine).

No. 168.—They are distinguished by the different temperatures at which they melt.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

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THE NEW YORK MEDICAL JOURNAL, April 7, 1888.

Lectures and Addresses.

THE CARTWRIGHT LECTURES
ON
THE GENERAL PATHOLOGY OF FEVER.

DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

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Lecture I.

Thursday, March 29, 1888.

There is no subject in medicine of more general and varied interest than fever. The practitioner in every department of medicine, the pathologist, and the physiologist are equally interested in the investigation of the nature and effects of fever. Even the physicist and the chemist, who are not directly concerned with medical science, have lent their aid to the study of animal heat and its disorders. The history of opinion regarding fever is in great part the history of medicine itself, for no feature of the great systems of medicine from Hippocrates and Galen to the present century so characterizes these systems as the views held concerning the nature of fever. In consequence of the importance of the subject and of the number and ability of those engaged in its investigation, it might be supposed that no chapter in medical science would be better understood than that pertaining to fever. That such is not the case is due to the fact which is becoming more and more evident that the reaction of the animal system which we call fever is dependent upon the most fundamental and essential properties of protoplasm and of nerve energy. In proportion as our knowledge of these properties increases and becomes more accurate, we gain a clearer insight into the complicated processes involved in the production of fever.

I should hardly have selected for this course of lectures a subject where so many problems remain unsolved and which must necessarily be presented in so fragmentary a form, were it not that in all ages the opinions held concerning the nature of fever have controlled measures employed in its treatment. In proof of this, one need not go back to the time when fever was regarded as an almost conscious struggle of an *anima* with a noxious principle, in which struggle the physician was to interfere as little as possible, or to the time when fever was supposed to result from morbid humors which the physician should aim to eliminate by the production of a critical discharge, or to the period when the treatment hinged upon the belief in either the sthenic or the asthenic nature of fever. In our own time the treatment of fever is intimately connected with the answers variously given to such questions as whether fever aids in the elimination or destruction of infectious agents concerned in its production; whether increased waste of tissue is a constant condition and a source of danger in fever; what part is played by infection and what part by elevation of temperature in causing the grave symptoms of fever; what, in addition to lowering of temperature, are the effects of so-called antipyretic measures of treatment.

I need hardly say that the subject of these lectures relates to fever as a condition common to all febrile diseases. Some writers understand by the term fever used in this sense merely abnormal elevation of temperature, others elevation of temperature and the symptoms directly caused by this, and still others a complex of symptoms of which increased temperature is the most prominent symptom but not necessarily the cause of the others. In considering the general pathology of fever it is convenient to adopt the last meaning, although it would doubtless be less confusing if the word fever were applied only to abnormal elevation of temperature.

Increased temperature being the dominant and essential symptom of fever, all discussions as to the nature of fever center around the question, How is febrile rise of temperature produced? It is to the consideration of this question that I first invite your attention. As there are other aspects of fever which I wish to discuss, it will be necessary to present the matter belonging to this division of the subject in as succinct a form as is compatible with clearness. Twelve years ago Burdon Sanderson brought together in an admirable critical review the results of investigations upon this subject up to that period. Since that time important additions have been made to our knowledge of the mode of production of fever.

In the wonderful preservation of a nearly constant temperature which characterizes in health the warm-blooded animals three factors are concerned—viz.: the production of heat within the body, the loss of heat from the body, and the regulating mechanism by which the varying heat-production and heat-loss are so balanced that the internal temperature remains practically constant. It is theoretically possible that the rise of temperature in fever may be due to the disturbance of any one or more of these factors. It becomes necessary, therefore, to consider the behavior of heat-production, of heat-loss, and of the regulating mechanism in fever.

We will begin with a consideration of the production of heat in fever. The amount of heat produced by the body is estimated by two methods, one known as direct calorimetry, the other as indirect calorimetry. In the method of direct calorimetry the animal is placed in a closed ventilated box surrounded on all sides by a compartment containing water or air, and the amount of heat discharged from the body is determined by the quantity of heat imparted to the surrounding water or air. If the temperature of the animal remains unchanged during the period of observation, the heat-production is equal to the heat-loss; if the temperature rises or falls, the amount of heat corresponding to this change of temperature—an amount determined by multiplying the weight of the animal by its specific heat and by the number of degrees of altered temperature—is added to or subtracted from the quantity of heat imparted to the calorimeter. Time will not permit me to enter into experimental details in this connection; it must suffice to say that the method of direct calorimetry necessitates the introduction of a number of corrections which can not be determined with absolute accuracy, so that the results obtained are of relative rather than of absolute value.

Hitherto the estimation of heat-production in fever by determining the entire amount of heat liberated from the body has been made only upon animals in which fever has been artificially produced. The most elaborate researches of this nature are those of Senator and of Wood.* The experiments of Wood are of the greater value because he extended his observations over longer periods of time.

In four of the seven calorimetrical experiments of Wood on different fevered dogs comparison can be made of the amount of heat produced hourly in fever with that produced by the same animal when fed and when in a state of hunger. During the period of fever the animal was also in a condition of hunger. I have computed from Wood's tables that the average hourly heat-production during seven days described as first and second fever days is a little over 23 per cent. greater than that produced by the healthy animal during a state of hunger, the minimum excess being 1 per cent. and the maximum 55·5 per cent. If a comparison is made of different periods during the existence of fever there are found to be even greater fluctuations in the amount of heat-production than these figures would indicate, this amount being sometimes more than double that in hunger, and sometimes considerably less than the average production in hunger. Moreover, these experiments show no definite relation between the height of the temperature and the amount of heat produced, nor is it possible to deduce from them any relation between heat-production and the different stages of fever, such as the more recent calorimetrical experiments of Wood, Reichert, and Hare appear to show, and which will be described farther on. An important outcome of these, as well as of all similar calorimetrical experiments, is that, although the heat-production of an animal in fever is greater than that of one under like conditions of nourishment, it is, as a rule, less than that of the same animal upon a full diet.

There are many reasons which make it important to control the experimental results obtained from animals in fever by corresponding observations of human beings. The agents used in producing experimental fever have generally been putrid fluids or pus, the injection of which causes sometimes diminution instead of elevation of temperature. When fever is thus produced it is usually of short duration and of only moderate intensity, the rise of temperature being rarely more than four degrees, and sometimes not more than one degree Fahrenheit. Moreover, a large part of the important rôle played by the skin in the regulation of the bodily temperature in man is assumed by the lungs in these animals.

Complete calorimetrical observations of human beings in fever encounter difficulties which have not yet been overcome. The imperfect or incomplete methods employed by Liebermeister and by Leyden* in determining the heat-production of human beings in fever justify the inference that this production is increased, and apparently, as a rule, to a greater extent than in animals, but they do not warrant positive conclusions as to the quantity of heat produced.

We turn now to the results regarding febrile production of heat obtained by what has sometimes been called indirect calorimetry. Inasmuch as the heat-energy of the body is the result of chemical changes of its proteids, fats, and carbohydrates, it is evident that, if we know the kind and the amount and the heat value of the substances consumed in a given time within the body, we can compute their heat-production. These chemical changes, so far as their final products are concerned, are processes of oxidation. The heat-values of the substances consumed in the body were determined first by Frankland, and more recently, with greater accuracy, by von Rechenberg, Danilewsky, and Rubner. The investigations of Pettenkofer and Voit have shown that in hunger almost exclusively fats and proteids are oxidized, and that in this condition, by determining the amount of oxygen absorbed and of nitrogen and of carbon excreted, we can estimate the quantity of fat and of proteid substance oxidized during the period of observation.

Physicians of past centuries regarded increased consumption of the material of the body in fever as so evident that it needed no special demonstration, and after Lavoisier made apparent the sources of animal heat it was accepted almost unquestioningly until the last quarter of a century that fever was essentially a process of increased combustion or oxidation. The immense historical importance of the promulgation, in 1863, of Traube's theory, which denied the dependence of fever upon increased production of heat, is that this theory has led to a careful inquiry into the grounds of beliefs hitherto generally accepted and to the demonstration of the unsatisfactory nature of the evidence hitherto thought to be conclusive.

The striking loss of weight of most fever-patients is, as is well known, a fact of great clinical importance. Weber and Finkler have demonstrated that animals in fever lose weight more rapidly than healthy animals in hunger, and, although observations on human beings with reference to this point are not concordant in their results, there can be little doubt that the tendency of fever is to cause a greater loss of weight than can be explained simply by insufficient nutriment. This tendency, however, may be masked by the retention of water within the body, as the investigations of Leyden and others have shown. While, therefore, the studies of the loss of weight in fever leave no doubt that there is increased destruction of tissue in this condition, we can not consider this loss as an accurate measure of the increased destruction nor, without further knowledge, as an indication of increased oxidation, still less as proof of excessive production of heat.

It was for a long time believed that the excessive excretion of urea in fever afforded satisfactory evidence of increased oxidation and of greater production of heat. We now know, especially from the researches of A. Fraenkel, that this is so far from being true that we can explain the excessive elimination of urea better upon the assumption of diminished than of increased oxidation of tissue. In certain pathological conditions, notably phosphorous poisoning, the amount of urea excreted may be increased more than threefold, notwithstanding, or, as Fraenkel believes, in consequence of, diminished absorption of oxygen and elimination of carbonic acid. It can, moreover, be computed that even without any diminution of the respiratory gases the discharge of urea may be increased without greater production of heat. While, therefore, the enormous increase in the discharge of urea in fever sheds valuable light upon a most obscure subject, the nature of febrile metabolism, it does not, regarded by itself, afford us any information as to the production of heat.

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* Senator, "Untersuch. üb. d. fieberhaften Process," Berlin, 1873. Wood, "Fever; a Study in Morbid and Normal Physiology," Philadelphia, 1880.

* Liebermeister, "Handb. d. Path. u. Therap. d. Fiebers," Leipsic, 1875. Leyden, "Deutsches Arch. f. klin. Med.," Bd. v.

Failing to find satisfactory proof of increased oxidation in the loss of weight of the body, or the excessive excretion of urea in fever, attention was then directed to the elimination of carbonic acid, an excretory product which bears a much closer relation than urea to the production of heat. Immense importance has been justly attached to the determination of the amount of carbonic acid excreted by an individual in fever. No point in the whole battleground of fever pathology has been more hotly contested than whether increased production of carbonic acid is an essential part of the febrile process. The first investigators of this question—Leyden, Liebermeister, Senator—contented themselves with the determination of the amount of carbonic acid eliminated by an individual in fever and in apyrexia. There are several considerations which greatly diminish the value to be attached to the mere estimation of carbonic acid excreted without simultaneous determination of the amount of oxygen absorbed. As has been urged by Senator and with special clearness by Pflüger, increased discharge of carbonic acid does not necessarily imply increased production of the same. The discharge of carbonic acid varies, independently of its production, with the rhythm and depth of respiration, and with the temperature and the alkalinity of the blood, all factors which are altered in fever in such a manner as to favor increased liberation of carbonic acid. It is true that the influence of these factors would cause increased discharge of carbonic acid out of proportion to its production only for a limited period, and that the prolonged increase in the amount of carbonic acid discharged in fever which has been found by several observers can hardly be interpreted otherwise than in favor of increased production. There is another point which detracts still further from the value of exclusive determinations of the quantity of carbonic acid discharged, and this is that it makes a great difference, so far as the production of heat is concerned, whether the carbonic acid is the result of oxidation of carbohydrates, of fats, or of proteids, a difference amounting, according to Rubner, to 29·5 per cent., or, if only the proteids and fats are considered, to over 20 per cent. In investigations of nutrition, it is now known to be of the utmost importance to determine the so-called respiratory quotient—that is, the ratio between the amount of carbonic acid discharged and that of oxygen absorbed. This quotient varies in a definite way with the kind of material oxidized in the body, and an accurate knowledge of it would enable us to draw conclusions as to the substances consumed in fever.

The investigations which have been published within the last few years upon the absorption of oxygen, as well as the discharge of carbonic acid, in fever are to be ranked as most valuable contributions to our knowledge of fever. The first estimation by trustworthy methods of the amount of oxygen absorbed, and of carbonic acid excreted in fever, was made in Pflüger's laboratory by Colasanti upon a guinea-pig, and was published in 1877. Since that time two careful and elaborate researches upon this subject have been made, the one by Finkler and the other by Lilienfeld.*

These experimenters found that in fever there was increase of the amount both of oxygen absorbed and of carbonic acid excreted. Making comparison with healthy animals, under the same conditions of nutrition, Colasanti found that the increase in the absorption of oxygen amounted to 18 per cent., and in the excretion of carbonic acid to 24 per cent. Finkler, whose experiments were made also upon guinea-pigs, found, under varying conditions of external temperature, the average febrile increase of oxygen to be 13·8 per cent., and of carbonic acid 13·3 per cent., and Lilienfeld, who experimented on rabbits, found the average increase of oxygen to be 15·9 per cent. The statement of these averages gives an incomplete conception of the oxidation in fever, as they are derived from all stages of fever and varying elevations of temperature. No constant proportion was found to exist between the height of the temperature and the amount of oxidation. On the other hand, a relation was observed between the oxidation and the stages of fever, viz.: the initial stage with rising temperature, the acme with constant high temperature, and the defervescence with falling temperature. During the period of rising temperature oxidation was increased, and in this stage Finkler found the highest percentages, amounting to 36·6 per cent. in the increase of oxygen and 37·6 in that of carbonic acid. There were, however, marked fluctuations in this stage both in the temperature and in the amount of oxidation. In the stage of constant high temperature such high percentages were not noticed and the fluctuations were less marked. The processes of oxidation, according to Lilienfeld, are increased on the average less in the acme than in the initial stage of fever.† During defervescence of the fever the increased oxidation falls and may sink below the normal. Taking a broad view of these stages, we may say, therefore, that the periods of rising, constant, and falling temperatures in fever correspond to the periods of rising, constant, and falling oxidation, but we must bear in mind that the fluctuations in oxidation are much greater than and bear no constant relation to those of temperature, so that in each period there are times when oxidation may rise or fall most decidedly without corresponding changes of temperature.

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* Colasanti, Pfluger's "Archiv," Bd. xiv; Finkler, *ibid.*, Bd. xxix; Lilienfeld, *ibid.*, Bd. xxxii.

† In the period of rising temperature there was an increase of oxygen absorbed of 27 per cent., in the acme of 14·9 per cent.

Inasmuch as these experiments have shown that the increased excretion of carbonic acid in fever is accompanied by increased absorption of oxygen, and, as will be explained presently, that the respiratory quotient, if it changes at all, sinks, it is evident that we need not discard experiments in which only the amount of carbonic acid excreted has been estimated by good methods. The most accurate of these experiments are those of Leyden and Fraenkel upon fevered dogs.* They found that, without exception, carbonic acid was excreted in larger amount in fever than in health under the same nutritive conditions, the excess amounting sometimes to 70 per cent., and in general being larger than in the experiments which have been previously considered. The earlier and meritorious experiments of Senator upon this point did not give uniform results, and he felt justified in concluding that there was no evidence of increased production of carbonic acid in fever. Subsequent experiments with far more accurate methods have demonstrated the incorrectness of Senator's conclusions. It may be well to call to mind that Burdon Sanderson's deductions, which have naturally had great influence among physicians here and abroad, were based in great part upon the data derived from Senator's experiments.

Hitherto the methods employed in studying the respiratory gases of human beings in fever have not approached in accuracy those used in the experiments described. If the discordant results of Wertheim, which were obtained by methods manifestly very inaccurate, are discarded, all other investigators have observed augmented discharge of carbonic acid in fever of human beings. Leyden found an excess of 50 per cent. in the febrile discharge of carbonic acid, and Liebermeister, whose observations were made chiefly on cases of intermittent fever, found an excess of 30 to 40 per cent. in the period with rising temperature, and of 19 to 31 per cent. in the acme of the fever. During the defervescence of the fever the excess of carbonic acid discharged diminished and sometimes wholly disappeared. In one instance in which the determination was made during the rigor of intermittent fever the carbonic acid excreted was two and a half times the normal amount, an excess so enormous that it was undoubtedly due in great part to the muscular movements which attended the chill.

Although we can not consider these figures as absolutely accurate, they indicate clearly that in human beings as well as in animals fever is characterized by increased oxidation, and apparently that as a rule in man the excess of oxidation is greater than in the experimental fever of animals. This was to be expected, as it is difficult to produce experimentally in animals anything approaching in intensity the well-marked fevers of human beings.

As the result of these laborious researches we may consider it established that increased oxidation is a part of the fever process. It has been maintained that this augmented oxidation is simply the result of the elevation of temperature, but it can be proved that this is not true. Pflüger has demonstrated that the processes of oxidation are more active at high than at low temperatures of the body, and he has also established the increment of oxidation which corresponds to each degree of rise of temperature. By means of these data Finkler has computed that in guinea-pigs the febrile elevation of temperature of 1° C. could cause an increase of the absorption of oxygen of only 3·3 per cent. Moreover, Lilienfeld found decided increase in the processes of oxidation before there was any marked elevation of temperature, and all the experiments have rendered it quite evident that there is no such relation in fever between the height of the temperature and the energy of oxidation as would be expected if the augmented oxidation were merely the result of the increased temperature.

There is no reasonable doubt that the more energetic oxidation which we find to be an essential part of the process of fever indicates increased production of heat. Exactly what amount of heat-production corresponds to the increased oxidation we can not know until the kind and the quantity of substances oxidized in fever have been determined. It is to be regretted that no experiments have been made in which the amount of nitrogen excreted has been determined at the same time with the estimation of the oxygen absorbed and of the carbonic acid discharged. These data would enable us to form some estimate, although not an accurate one, of the amount of heat-production corresponding to the oxygen absorbed, unless very different laws from those in health control the oxidation processes of fever.

Mention has already been made of the importance of determining in fever the respiratory quotient, or the ratio between the carbonic acid discharged and the oxygen consumed. A few words will make this clear. It is well known that under ordinary circumstances in health not all of the oxygen consumed reappears in the carbonic acid discharged. This indicates that a part of the oxygen absorbed is used in other oxidations than those resulting in the production of carbonic acid. According to the extent of these other oxidations, therefore, the respiratory quotient must vary. It is probable that these oxidations of which carbonic acid is not a product result, at least in part, in the formation of water, which is therefore one of the excretory products of the body, as has been urged especially by Professor Austin Flint. The influence of various circumstances upon the respiratory quotient has been studied, but what especially concerns us here is that in hunger this quotient sinks, which is to be expected from the fact that in this condition almost exclusively fats and proteids are oxidized.

We evidently possess in the determination of the ratio of carbonic acid discharged to the oxygen consumed a means of reaching a conclusion as to a cardinal point in the pathology of fever—viz., whether the processes of oxidation in fever conform to the laws which govern them in health, and particularly whether, as has often been asserted, unusual or incomplete products of oxidation are formed to any considerable extent in fever. Colasanti and Lilienfeld found that the respiratory quotient in their fevered animals did not vary from that of healthy animals under similar nutritive conditions. Finkler observed that the respiratory quotient fell in fever somewhat more rapidly than in hunger, and this he explains by the more active oxidation in fever.

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* Leyden and Fraenkel, Virchow's "Archiv," Bd. lxxvi.

All three experimenters reached the conclusion that the substances oxidized were the same in fever as in health, and that other than the normal products of combustion were not formed in fever in any considerable amount. That the metabolism in fever does differ in at least one important respect from that in hunger is evident from the excessive amount of urea excreted in fever, but considerable variations in the disintegration of albuminous material may occur without much change in the respiratory quotient.

The only determinations of the febrile consumption of oxygen and discharge of carbonic acid in man are those of Wertheim and of Regnard. Both investigators found a decided diminution of the respiratory quotient. The method employed by Wertheim was so defective that no confidence can be placed in his results. The experiments of Regnard * are presented with great neatness, but his results on other points differ so much from those obtained by trustworthy physiologists and by better methods that we can not accept his conclusions as to the respiratory quotient in fever without confirmation. Regnard found in all fevers which he studied a most marked diminution of the respiratory quotient. If this were true, it would follow that in fever a much larger part than in health of the oxygen consumed is employed in other oxidations than those yielding carbonic acid. This would confirm the widely accepted belief that water and products of incomplete oxidation are formed in excessive amount in fever.

From the unfortunate discrepancy of these results it is evident that the knowledge which we now possess of the processes of oxidation in fever is not sufficient to enable us to form an accurate estimate of the heat-production. In hunger, from one fourth to one third of the absorbed oxygen is available for combination with hydrogen to form water, the remainder uniting with carbon to form carbonic acid (Regnault and Reiset). If in fever the same ratio existed, then the excess of heat-production would be proportionate to the excess of oxygen absorbed, assuming that the substances oxidized were the same in both conditions; if, however, as Regnard's experiments indicate, a larger proportion of oxygen was available in fever for the oxidation of hydrogen, then the increment of heat-production would be still greater, for the same amount of oxygen produces more heat when employed in the oxidation of hydrogen than in that of carbon. It is also to be considered that the same quantities of hydrogen and of carbon in their oxidation yield varying amounts of heat, according to the chemical compounds in which they are contained, and we can not say positively whether the compounds oxidized are the same in fever as in health under like conditions of nutrition. Upon the whole, the weight of evidence is in favor of the view that the excess of heat-production in fever is approximately proportionate to the increase in the consumption of oxygen, but it would be rash to assert this positively. It is evident that in fever ordinarily a much smaller amount than in health of the energy resulting from chemical processes is transformed into external mechanical work, so that relatively more remains in the form of heat.

In connection with this discussion of the possibility of unusual sources of heat in fever may be mentioned an hypothesis which has been advanced with much ingenuity by Dr. Ord.* This hypothesis is based upon the assumption, which is probable enough, that there are in the body chemical processes in which heat-energy is transformed or rendered latent. These processes are thought to be chiefly those concerned in the building up of tissue. It is argued that, inasmuch as the construction of tissue is manifestly in abeyance in fever, the amount of heat in the body may be increased not only by disintegrative processes, but also by "the persistence in the form of heat of energy which should have taken another form." That these building-up processes influence decidedly the amount of heat produced in the developing ovum has been demonstrated by d'Arsonval's calorimetrical determination that the egg during incubation absorbs heat, notwithstanding the consumption of oxygen and the excretion of carbonic acid. This fact, which might have been predicted, certainly does not justify us in refusing to attach calorimetrical value to the determination of the respiratory gases and the urinary nitrogen. From the little we know of these constructive processes in human beings, we should infer that the amount of energy in the form of heat which they appropriate bears only a very small ratio to the total heat-energy set free by heat-producing processes, so that their cessation would not bring a large increment to the heat of the body. Moreover, these constructive processes are also in abeyance, although doubtless to a less extent, in starvation, with which experimental fever is usually contrasted as regards heat-production and heat-loss. It is not probable that any extraordinary difference in the behavior of the processes of tissue-building in fever and in starvation can occur without affecting the respiratory quotient. For the present, therefore, we can not attach any great importance, so far as the increase of heat-energy in fever is concerned, to the inactivity of heat-absorbing processes.

We have gone over now the evidence which, in my judgment, establishes the fact that there is increased production of heat in fever. The same conclusion is reached also by the study of the loss of heat from the body in fever. That fever is accompanied by increased production of heat and by more active combustion has been in all ages the belief of the majority of physicians. This belief, however, has been rather instinctive than based upon actual demonstration. It has been contested by investigators of great ability and on the ground of scientific observations. For these reasons and on account of the importance of the subject it has seemed to me desirable to present to you the exact evidence, although many of its details, I fear, may have wearied you. We have learned, moreover, certain facts concerning febrile thermogenesis which the mere observation of fever patients does not render so apparent. We have found that there is no definite relation between heat-production and the height of the temperature, so that we may have excessive thermogenesis with low as well as with high temperatures. There appears to be, however, a relation between the stages of fever and heat-production, this being in spite of remarkable fluctuations, greatest in the initial stage and least in defervescence. Although, for reasons which have been mentioned, and others that might have been adduced, we can attach hardly an approximative value to figures which purport to give the actual heat-production in fever, still, unless far more serious errors than seems possible inhere in the methods of direct and of indirect calorimetry, we can draw one important conclusion. This is that, while an individual in fever produces more heat than he would in health under similar conditions as to food and muscular movements, he does not produce necessarily in fever more heat than he would in health on a full diet. And it is certain that he usually produces far less heat in fever than he often does under circumstances which normally increase heat-production, such as a cool environment and muscular exercise. That one in health with little or no change of temperature may produce twice or more the quantity of heat which he produces in fever makes it plain that it is impossible to explain febrile rise of temperature simply on the basis of increased thermogenesis or, what probably comes to the same thing, of increased oxidation. That in health vastly increased heat-production may occur with comparatively little change of temperature is, of course, due to the fact that the dissipation of heat is proportionately increased. It is self-evident and, so far as I know, has never been disputed that in fever the equilibrium is so disturbed that heat-loss does not correspond to heat-production as it should in health. This disturbance of equilibrium can be brought about in various ways, and it is only by the determination of the actual heat-production and heat-loss in fever that we can say in what direction the balance is disturbed.

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* Regnard, "Recherches exp. sur les variations pathologiques des combustions respiratoires," Paris, 1878.

* Ord, "British Med. Journal," 1885, vol. ii.

We have found that the production of heat is increased in fever when the comparison is made with like conditions of nourishment and of environment. It is obvious that the total loss of heat can not equal the total production of heat during the period of febrile rise of temperature.

As is well known, most of the heat of the body is liberated from the skin and from the lungs; from the former by radiation and conduction and by the evaporation of moisture, and from the latter by evaporation of moisture and warming the respired air. It has been estimated that in man about 80 per cent. of the total heat-dissipation is from the skin.

The method of direct calorimetry already described has been applied only to animals for the determination of the total heat loss in fever. Here Wood's experiments are the best which we possess. Leyden and Liebermeister have furnished calorimetrical data which, although unsatisfactory in many respects, indicate the general direction of febrile heat-loss in human beings. All of these experiments show that more heat is dissipated in fever than under like conditions in health. The fluctuations of heat-loss during a febrile paroxysm are so great that the statement of an average for the entire period has little significance. Such an average, according to Wood's results on fevered dogs, would fall between 20 and 30 per cent. excess of heat-loss as compared with the loss in health under like conditions of food. The dissipation of heat in fever, however, may be at times more than double the normal amount, and again may sink below the normal. We have not sufficiently accurate estimates either of the total amount of heat produced or of that dissipated during a febrile attack to enable us to strike a balance between the two. Some persons have been so impressed with the large amount of heat lost during certain periods of fever that they have concluded that there must be far greater excess of heat production than previous investigations had shown to be probable. They suggest that there are sources of febrile heat of which at present we have no idea. Such conclusions seem to me quite unwarranted when we consider the behavior of heat-loss not for a limited time, but throughout the different stages of a paroxysm of fever. We have already seen that we obtain no satisfactory conception of febrile production of heat unless we follow it during the stages of fever, and this is no less true of heat-dissipation. The observation of the condition of the skin as regards temperature and moisture must in all ages have afforded an insight into the general behavior of heat-dissipation during the different periods of fever. It does not require any instruments of precision to make plain the fact that a cold, dry skin, such as we observe during a febrile chill, liberates less heat than normal, or that a hot, moist skin, such as we are likely to find at the defervescence, loses more heat than normal. Not quite so transparent is the direction of heat-loss during the hot stage or acme of a febrile paroxysm or the fastigium of a continued fever. Here the skin usually appears hot and dry. The ordinary impression that more heat than normal is dissipated during this stage is supported by calorimetrical experiments. There can be no doubt that the elevation of the cutaneous temperature which we observe in the hot stage of fever causes an increase in the amount of heat lost by radiation and conduction. Similar elevations of cutaneous temperature in health, such as those caused by muscular exercise, are accompanied by increased moisture of the surface. Not only is visible perspiration usually absent during the hot stage of fever, but the invisible perspiration is, as a rule, relatively, although not absolutely, diminished, as Leyden has shown. The dryness of the skin, therefore, is a factor which in the hot stage of a fever tends to lessen heat-dissipation. Clinical observation, however, shows that fevers differ markedly from each other as regards perspiration during the hot stage, the skin being sometimes bathed in perspiration without any depression of temperature. It would undoubtedly be of great interest to possess trustworthy data as to the exact loss of water from the surface of the body in different fevers and at different stages of fever. We can not place much reliance upon the indications afforded by Weyrich's hygrometer, which has been repeatedly used for this purpose. More is to be expected from the method employed by Peiper* in studying insensible perspiration under physiological conditions.

The general impressions regarding febrile loss of heat derived from clinical observations are supported by calorimetrical experiments. The dissipation of heat is least during the initial stage of fever, and greatest during the period of defervescence. During the hot stage, or fastigium, heat-dissipation exceeds the normal, but usually, on account of the dryness of the skin, not so much as one might infer simply from the impression of heat received by the hand when placed upon the skin.

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* Peiper, "Zeitschrift f. klin. Med.," Bd. xii.

During the initial period the loss of heat, although on the average less than in the following stages, is usually greater than normal. If, however, the rise of temperature is rapid, the heat-loss falls below the normal amount. As there is now increased production of heat, there is evidently a glaring disproportion between the two factors, heat-production and heat-loss, and under these circumstances the febrile attack is likely to be ushered in by a chill. During the febrile chill all the efforts of Nature combine to produce in the shortest time the greatest possible elevation of temperature. Not only is heat-loss reduced to a minimum, but heat-production is excited to the utmost.

During the period of defervescence, on the other hand, the relation between heat-loss and heat-production is reversed. This is, of course, most apparent when the fever terminates by crisis with rapid fall of temperature. Then the loss of heat is excessive, being sometimes threefold that in the normal state, and heat-production is relatively and often absolutely diminished.

It is of importance to remember that there are continual and irregular fluctuations in the dissipation of heat during the different stages of fever. These fluctuations bear no definite relation either to the momentary production of heat or to the height of the internal temperature. We deal in ordinary life so much more with units of temperature than with units of heat that it is difficult for us to keep constantly in mind the fact that no inference can be drawn as to the height of the internal temperature from the knowledge of the momentary heat-production and heat-loss. If the heat-loss falls behind heat-production, the temperature of the body rises, and it can remain at this elevated point with either diminished or increased heat-production so long as the heat-loss equals the heat-production.

No correct conception of the condition of the heat-regulating mechanism in fever can be obtained without taking into consideration these irregular variations in the discharge of heat, and it is a merit of Senator and his pupils to have emphasized this point particularly. These variations are made apparent, not only by calorimetric measurements and direct observation, but also by the studies which have been made of the cutaneous temperature in comparison with the internal temperature in fever. Hankel's law that the difference between the temperature in the axilla and that of the surface of the body in the febrile condition is less than in the normal condition manifestly does not hold for the chill, in which it has been proved that the superficial temperature falls while the internal temperature rises. Jacobson, Wegscheider, and Schulein [*] find that there constantly occur in the course of most fevers changes of the superficial temperature which stand in no relation whatever to alterations of the internal temperature. Schulein thinks that he has discovered some facts in this regard which are available in diagnosis. However this may be, these observations indicate that contraction and dilatation of the cutaneous vessels are constantly occurring, and without any regularity, in fever. These irregular variations in the caliber of the blood-vessels are also apparent to the eye in the vessels of the rabbit's ear during fever. When it is considered, furthermore, that these irregularities of cutaneous circulation vary decidedly in different situations, no further proof is needed that the mechanism which regulates the discharge of heat from the surface of the body is profoundly disturbed in fever.

These alterations in cutaneous circulation are such striking phenomena that it is perhaps not surprising that two great medical authorities should have based upon them exclusively theories of fever, Traube assuming excitation and Mayer paralysis of vaso-motor nerves as the primal element in fever. We need not discuss these theories, now generally abandoned in their exclusive form. From what has been said concerning the loss of heat in fever it is evident that we can not explain febrile rise of temperature solely by the behavior of heat-dissipation any more than we can explain it solely on the basis of increased heat-production. In rejecting Traube's theory that fever is the result solely of retention of heat, we must still recognize the fact that decrease in the dissipation of heat, at times absolute, at other periods relative, is a factor of the utmost importance in the febrile process.

From whatever point of view we consider the question, we can not avoid the conclusion that it is the mechanism which controls the relation of heat-production to heat-loss which is primarily disturbed in fever.

Heat-production is increased in fever, but, if the regulating mechanism were normal, then the discharge of heat would be proportionately increased and the temperature would not be materially affected. Nor would the force of this argument be changed if febrile thermogenesis were twice as energetic as we suppose it to be.

The loss of heat is increased in fever, so that on this ground alone we should be obliged to assume increased heat-production. But, even if it were proved that heat-dissipation was diminished, as has recently been maintained again by Rosenthal,[*] and that fever was the result of heat-retention alone, it would still be necessary to admit that the regulating mechanism was at fault, for Pflüger has demonstrated that when this is normal changes in the temperature of the skin are attended by such changes in heat-production that the internal temperature remains within wide limits unaltered.

I repeat, then, that the conclusion is forced upon us that the fever-producing agents must act either directly or indirectly upon the mechanism regulating the harmonious relation of heat-loss to heat-production. That the heat-regulating mechanism, although profoundly disturbed, is not entirely paralyzed in fever is proved by the effect of heat and cold upon fevered individuals. Although Colasanti believed that his fevered guinea-pig had lost all power of heat-regulation under varying external temperatures, a similar conclusion has not been reached by others who have investigated this question. We can best describe the condition of heat-regulation in fever as unstable or ataxic. External cold stimulates to some extent the heat-production of an individual in fever, but by no means so much as it does in health. A person in fever is not able to retain his bodily temperature under the influence of heat and cold to the same degree that he can under normal conditions. Liebermeister, as is well known, held that heat-regulation in fever was simply adjusted for a higher point, although, he admits, not perfectly adjusted. Experience shows that this so-called adjustment is so unstable that it does not seem proper to compare it with that to normal temperatures in health, so that it is not clear what deep meaning lies in Liebermeister's idea.

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[*] Jacobson, Virchow's "Archiv," Bd. lxv; Schulein, *ibid.*, Bd. lxvi; Wegscheider, *ibid.*, Bd. lxix.

[*] Rosenthal, "Deutsche med. Wochenschrift," 1888.

We can not imagine the heat-regulating mechanism to be other than a nervous one. Some years ago this was about as far as the theory of the mechanism of fever could be carried. All paths led to this mysterious nervous apparatus, and beyond this nearly all was speculation. As has been said, we stood before imposing processes veiled in the deepest obscurity. Since then the veil has been lifted here and there, and we have caught glimpses of the nature of these processes. I refer particularly to the results of researches which have brought to light a more immediate and direct dependence upon nerve energy than had been supposed of chemical processes concerned in the disintegration and construction of tissue, and therefore in the production of heat.

With one side of the nervous mechanism concerned in temperature-regulation the classical investigations of Claude Bernard have made us tolerably familiar. This is the vasomotor nervous apparatus presiding over the circulation of blood in the superficial parts of the body and thereby controlling in great measure the discharge of heat. That the important part taken by the perspiration in the dissipation of heat is likewise under nervous influence has been demonstrated by Luchsinger. The facts concerning this side of the regulation of heat are too well known to require elucidation on this occasion.

Heat-regulation, however, is effected not only by variations in the elimination of heat, but also by changes in the production of heat. Familiar as the fact is, it can never cease to arouse our admiration that the temperature of the body remains the same in cold and in warm atmospheres. Man has become so dependent upon clothing that in the naked condition his capacity of preserving his normal temperature in a cold environment is much less than that of most animals. Pflüger has demonstrated that the heat-regulation under varying external temperatures is accomplished by changes both in heat-production and in heat-loss, so that in a cold atmosphere more heat is produced and in a warm atmosphere less heat, provided the external temperature is not so high or so low as to make it physically impossible to preserve the body temperature. It is evident that this is the most rational and economical method of retaining the internal temperature of the body. To regulate the body temperature simply by variations in the discharge of heat, as was formerly supposed to be the method, would be, as has been said, like regulating the temperature of our rooms summer and winter by opening and shutting the windows without controlling the source of heat.

A heat-producing, or thermogenic, apparatus, therefore, is no less a part of the heat-regulating mechanism than the heat-discharging or thermolytic apparatus, to use the terms employed by Foster. As the thermogenic apparatus is less generally understood, it is not permissible to dismiss its physiology in this connection so briefly as I have the thermolytic, although our knowledge of the former is very imperfect.

I can assume that the convincing reasons are known to you which have led physiologists to conclude that most of the animal heat is produced in the muscles and the glands, and that the muscles have the larger share in this function. It is also well known that stimulation of secretory and motor nerves causes not only visible physical alterations in the glands and muscles, but also production of heat. This sort of dependence of heat-production upon innervation has long been admitted. It may, however, not be so generally known that there are reasons to believe that nervous impulses control chemical changes which result in the production of heat independently of visible physical alterations of the tissues; in other words, that heat-production, or thermogenesis, is at least in considerable part under the immediate and direct control of the nervous system. The idea is not a new one, and was advocated especially by Claude Bernard. Recent discoveries, however, have given it unexpected support.

This subject of the relation of innervation to thermogenesis is most pertinent to the pathology of fever, but it is essentially a physiological one, and, as I wish to confine to a single lecture what I have to say concerning the theory of fever, it is impossible for me to do more than summarize the most essential points belonging here. This I can do the more readily as Dr. MacAlister,* in his admirable "Gulstonian Lectures on the Nature of Fever" which were delivered last year, has clearly and forcibly presented the main facts.

The larger part of these facts relates to the chemical changes and heat-production of muscles under varying conditions. That a large part of the chemical changes in a muscle in the condition which we call repose is under the influence of the nervous system is made apparent by the great diminution in its consumption of oxygen and formation of carbonic acid which follows the separation of the muscle from all connection with the central nervous system. This is conclusively shown by the experiments of Bernard, Pflüger, von Frey, and others. It is, of course, possible, and it has generally been supposed that under these circumstances it is simply the withdrawal of motor impulses which lowers the heat-producing energy of the muscle. Far more suggestive as regards the point under consideration are the results of investigations which have been carried on in Ludwig's laboratory by Meade Smith, MacAlister, and Lukjanow. These experimenters have shown that heat-production and contraction are in a measure independent properties of the muscle.

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* MacAlister, "Lancet," 1887, vol. i.

By various influences the thermogenic property may be so impaired that a stimulus causes contraction with scarcely any development of heat. The laws governing the restoration and the fatigue of the thermogenic function differ from those controlling the mechanical function. These researches, upon which I here only touch, have made it extremely probable that there are in the muscle chemical processes resulting mainly in the production of heat and chemical processes causing mainly contraction, and that these processes, although co-ordinate, are not identical. A new light is shed upon the meaning of the term chemical tonus of muscle, which has for some time been used by some physiologists. Great caution is properly exercised by Ludwig and his pupils in the interpretation of these interesting results. They do not infer from them necessarily the existence of so-called thermic or calorific nerves. They suggest that it is possible to explain the phenomena upon the supposition that there are in the muscle two kinds of material, thermogenic and contractile, and that the nervous impulses acting upon these may pass through the same set of nerves. Proof of the existence in connection with muscles of thermic in distinction from motor nerves would be afforded if we could succeed, after paralysis of the motor nerves, in exciting by nerve stimulation the thermogenic function of the muscle. We possess in curare a drug which paralyzes the terminations of the motor nerves. Meade Smith attempted by its aid to determine whether possible thermic nerves might be differentiated from motor, but he reached no positive conclusion on this point. There are, however, on record some observations which suggest the possibility that, in moderate doses, curare may leave thermic nerves intact after the suspension of the function of motor nerves. When an animal is profoundly under the influence of curare, the internal temperature falls, and the processes of oxidation are greatly reduced. The animal is no longer able to resist the changes of external temperature, its own temperature rising and falling like that of a cold-blooded animal when exposed to heat or cold. This effect of curare poisoning is another proof of the dependence of heat-production upon nervous influences. Claude Bernard, in his early researches on the action of curare, noted elevation of temperature soon after its administration. Recently U. Mosso * maintains that an animal may be placed so far under the influence of curare as to paralyze the voluntary muscles completely and the internal temperature either remain normal or rise. He infers that these moderate doses of curare, although sufficient to paralyze the motor nerves, must have left the thermic nerves intact. That rise of internal temperature is not due to retention of heat he thinks is evident from the normal or elevated temperature of the skin. Mosso is strengthened still further in his conclusion as to the existence of thermic nerves by finding that, after complete paralysis of the motor nerves by curare, injections of strychnine cause an elevation of rectal temperature which may amount to three degrees centigrade. Under these circumstances strychnine produces no spasms or other visible mechanical effect upon the muscles. Mosso brings forward a number of other experiments (decidedly open to criticism) intended to demonstrate the existence of nerves directly controlling heat-production, but those which I have mentioned are by far the most striking. It seems to me that the natural interpretation of these experiments is in favor of the view that there are nerves controlling heat-production in the muscle distinct from motor nerves. Far more conclusive as to this point than thermometric observations would be calorimetric experiments determining the heat-production of animals under varying doses of curare.

This whole line of experimentation directed toward the differentiation of the mechanical and the chemical functions of muscle is certainly most suggestive, but, so long as the interpretation of the results is not perfectly clear, we should be very guarded in drawing far-reaching conclusions. I can not refrain, however, from pointing out that, as mentioned by MacAlister, all of these thermogenic phenomena may be found eventually to depend upon nerves whose chief function on the one hand is the disintegration, the katabolism, of tissue, and on the other hand the restoration, the anabolism, of tissue. From the study of the electrical changes which stimulation of the pneumogastric nerve produces in the heart muscle, Gaskell concludes that this nerve puts the heart in a condition of relative rest, during which the energy of the muscle is increased. During this period there is reason to believe that the material of the muscle which, when disintegrated, gives rise to heat and mechanical work, is in the process of restoration. Hence Gaskell speaks of the pneumogastric or inhibitory nerve of the heart as anabolic—that is, it directs the restorative, formative, anabolic processes in the muscle. On the other hand, the accelerator nerve of the heart induces the opposite electrical changes in the heart muscle. Gaskell describes this nerve as katabolic—that is, its stimulation causes disintegration of the muscle materials, and liberates energy in the form of heat and of mechanical work. If it is found that similar inhibitory and accelerator nerves preside over the chemical changes in the voluntary muscles and other tissues of the body, then Gaskell's induction as to the existence of anabolic and katabolic nerves must be regarded as one of the most important and profound in modern physiology. Thermoexcitory nerves we should then rank as katabolic, thermoinhibitory as anabolic.

These investigations, tending to demonstrate the independent existence of thermogenic properties in the muscles, and possibly of nerves directly controlling thermogenesis, have prepared us for the consideration of the relation of the central nervous system to the heat-producing properties of the body. Here you will willingly permit me to confine my remarks to the more essential and best-established facts, without entering into a full discussion of one of the most perplexing subjects in the physiology of the nervous system.

The clinical basis of the doctrine that lesions of the central nervous system influence the temperature of the body directly was laid by Sir Benjamin Brodie, who reported the well-known case of fracture of the cervical vertebræ and injury of the spinal cord followed within a few

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* Mosso, Virchow's "Archiv," Bd. cvi.

hours by a rise of temperature to 111° F., measured between the scrotum and the thigh. Since then many similar instances have been reported. It is well to remember, in framing theories on the basis of these cases, that there are also on record not a few instances in which apparently similar injuries of the same parts of the spinal cord have been followed by an equally striking fall of temperature.

The experimental basis for the acceptance of an influence of the nervous system on temperature was laid by Bernard in his celebrated experiments on the effects of division of the sympathetic nerve in the neck. Bernard interpreted the increased temperature of the ear following this operation as referable not only to the larger amount of blood in the part, but also to increased tissue-metamorphosis and consequent heightened heat-production. The latter part of this interpretation is not generally accepted. It may be said here that the common idea that an organ or tissue, simply because it receives a larger supply of blood, indulges in more active metabolism, is opposed by the investigations of Pflüger, who finds that the amount of oxygen taken up by the cells depends in a far higher degree upon the state of their innervation at the time than it does upon the supply of oxygen. The demand of the tissues for oxygen is not increased simply because the supply is greater. The arguments upon which Pflüger bases this line of reasoning, although not without opposition, would dispose of the idea that when any considerable increase of heat-production in the muscles occurs this can be explained simply by vaso-motor changes. I mention this here because the opinion has been advanced that a large part of the increased production of heat in fever and after certain injuries to the nervous system is referable simply to vaso-motor changes in the muscles.

In 1866 Tscheschichin * published experiments which he interpreted as indicating the existence in the brain of centers which when irritated moderate the production of heat, and which he called heat-moderating, or heat-inhibitory, centers, and in the spinal cord of centers which when stimulated excite the production of heat, heat-excitor centers. These conclusions were not justified by the experiments, but they have been widely accepted.

I may say here that in this connection I use the term heat centers as a convenient and generally adopted one. There is a proper reaction against the prevailing misuse of the word center for all sorts of little-understood localization of nervous functions. It would undoubtedly be more accurate to use some such expression as thermically active region, instead of heat center.

It is not easy to reconcile the clinical fact that in human beings lesions of the spinal cord may be followed at once or in a very short time by extraordinary elevations of temperature with the results of experiments on animals. That the rise of temperature in human beings is not due to inflammatory fever is apparent from the rapidity with which it follows the injury. It can not be explained by vaso-motor lesions, for the paralysis of the vaso-motor nerves accelerates the discharge of heat from the surface of the body. The high temperature can be explained on Tscheschichin's assumption. The lesion either directly stimulates the spinal thermogenic centers or removes the influence of the thermo-inhibitory centers. These clinical observations are the strongest support which has been found for the belief in the existence of centers in the spinal cord which accelerate heat-production. Section of the cervical part of the spinal cord in a dog or a rabbit is, under ordinary conditions, always followed by a rapid fall of the internal temperature and diminished oxidation. These varying results in man and in animals have been explained by supposing that after section of the cervical cord, on the one hand, the discharge of heat is increased by dilatation of the superficial blood-vessels in consequence of vaso-motor paralysis, and, on the other hand, the production of heat is increased by withdrawal of thermo-inhibitory cerebral impulses. If, as ordinarily happens in dogs and smaller animals, the first factor predominates, then, in consequence of sinking of the internal temperature, the heat-producing processes are so reduced that the influence of the second factor is not manifest. The attempt has been made to test this explanation by placing the animal in a warm atmosphere. If thereby the heat discharge is reduced to a minimum, it is found that the internal temperature of the animal rises more rapidly than that of a normal one under the same external conditions. Here thermometric observations are not conclusive as to the point to be tested, for the more rapid rise can be explained simply by failure of the heat-regulating mechanism. Wood's calorimetric experiments, however, seem to show that there is greater heat production under these circumstances in the animal with a cut cord. These experiments admit of various interpretations, but, if they are regarded as establishing the assumption from which we started, then it is evident that in man and in large animals the increased heat-production after injury of the cord would not be so readily overcome by the increased discharge of heat from the surface, for in proportion to its volume a large animal has less surface than a small one. The interplay, therefore, of these opposing tendencies might cause different results according to the size of the animal.

Tscheschichin found that a transverse section made at the junctions of the pons and medulla oblongata was followed in a short time by rise of internal temperature. As the superficial temperature is also elevated, he concludes that there is no retention of heat; moreover, the section is made above the dominant vaso-motor center. Wood has shown by means of the calorimeter that after this operation there is actual increase in the production of heat. He, as well as Tscheschichin, interprets the experiment as indicating thermo-inhibitory centers above the lower border of the pons. Bruck and Gunter * repeated and modified these experiments under Heidenhain's direction. Out of seven cases in which they separated the pons from the medulla, they observed rise of temperature only in two; of eleven cases in which they punctured the pons with a needle, in five they noticed increased temperature. Heidenhain thinks these experiments indicate heat-exciting rather than

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* Tscheschichin, "Reichert u. Du Bois-Reymond's Archiv," 1866.

* Bruck and Gunter, Pflüger's "Archiv," Bd. iii.

heat-moderating centers, and it must be admitted that the evidence is not conclusive in support of either view.

By far the most interesting and conclusive experiments showing the influence of the central nervous system on thermogenesis are those of Isaac Ott, followed by Richet, Aronsohn and Sachs, Baginsky, and Girard.* The observations of Ott, Richet, and Aronsohn and Sachs were made independently and at about the same time, but Ott was the pioneer. The experiments of Aronsohn and Sachs are reported with special fullness and detail. These investigators find that if the skull of a rabbit is trephined at the junction of the coronal and sagittal suture, and a needle passed vertically down so as to puncture the anterior part of the caudate nucleus near its median convexity, there follows a rise of body temperature which may amount to three degrees or more, and which may persist for two or three days. The rapidity and the duration of this elevation of temperature vary somewhat with the depth of the puncture, parts immediately beneath the caudate nucleus being also thermically active. Puncture of the overlying cortex or medullary substance has no such effect upon temperature. With the exception of some increase in the frequency of the respiration and of the pulse, the animal, after puncture of the anterior median part of the caudate nucleus, presents no abnormal symptom other than the rise of temperature. I have several times repeated this experiment, and always with the result described. That the pyrexia induced by puncture of the caudate nucleus is not due to vaso-motor changes causing retention of heat is proved by Richet's and Ott's calorimetric experiments and by the determination by Aronsohn and Sachs that the consumption of oxygen and the elimination of carbonic acid and urinary nitrogen are increased. Aronsohn and Sachs and Girard find that electrical stimulation of the anterior median part of the caudate nucleus causes the same thermic phenomena as the puncture, and they therefore conclude that this region contains a thermo-excitor heat center. This is the natural interpretation of their experiment, although Baginsky and Ott regard the center as thermo-inhibitory on grounds which can not be considered convincing.

Ott maintains that there are four cerebral heat centers —one about the corpus striatum, the second in the caudate nucleus, the third in the anterior inner end of the optic thalamus, and the fourth near the median line between the optic thalamus and the corpus striatum. The greatest rise of temperature he found after injury of the thalamic center.

No adequate demonstration has been afforded of any influence of the cerebral hemispheres upon thermogenesis. Corin and van Beneden † find that pigeons, after removal of their cerebral hemispheres, exhibit no change of temperature, no failure of the heat-regulating mechanism, and no alteration in the excretion of carbonic acid.

I have endeavored to present to you the main physiological facts bearing upon the relation of the nervous system to thermogenesis. It must be admitted that we are left to surmises as to the interpretation of many of the facts, and particularly as to their connection with each other. But certain important points come out clearly. We have found evidence of the existence in the body of chemical processes resulting chiefly in the production of heat-energy. We have learned that these processes are under the direct control of the nervous system, and possibly of nerves distinct from those now recognized as motor or secretory. We have seen that there are regions in the central nervous system which are doubtless in some way connected with these nerves, and through them control the chemical processes resulting in the production of heat.

The bearing of these facts upon the theory of fever is evident. The study of heat-production and of heat-loss in fever has led us, by arguments which need not be repeated, to the conclusion that the pyrogenic agent must in some way act upon the heat-regulating mechanism. The study of this mechanism, more particularly of its thermogenic side, affords some insight into the manner in which the fever-producing agent may affect the regulation of heat. The main difficulty in the neurotic theory of fever has been to understand how by any action of the fever-producing agent directly upon the nervous system the chemical processes leading to heat-production could be stimulated. I have dwelt thus at length upon the innervation of thermogenesis to show that this difficulty has been overcome. To some it seems more reasonable to suppose that the pyrogenic agent circulating in the blood acts directly upon the tissues, altering and stimulating their chemical changes. This is the hæmic theory which in some form has always stood over against the neurotic theory of fever. Although it may at first glance appear simpler, the hæmic theory is really the more complicated, for it has already been set forth that we can not explain fever simply by increased heat-production, so that, even if the primary effect of the fever agent were upon the heat-producing processes, there must be a secondary influence upon the nervous system, for heat-dissipation is no less disturbed than heat-production.

If an animal is thoroughly curarized, so that no impulses from the nervous centers can reach the muscles, the great heat-producers, then it is found to be impossible to produce febrile elevation of temperature by the injection of pyrogenic agents. This fact, first demonstrated by Zuntz, is justly held to weigh heavily in favor of the neurotic theory of fever.

Contrary to the results of Murri,* I have not been able to induce rise of temperature or check its fall by the injection of pyrogenic agents into the jugular veins of dogs whose spinal cords had been cut in the lower cervical region. In these experiments I have employed various pyrogenic agents, and especially pepsin and papoid. One specimen of the latter which I used possessed very striking pyrogenic properties.

The pyrexia produced by puncture of the caudate nucleus in the manner already described possesses all of the essential properties of fever, regarded as abnormal elevation of temperature. In this experimental condition there are increased production of heat, increased dissipation of heat, excessive elimination of urea and of carbonic acid, and excessive absorption of oxygen. The breathing and the pulse are increased in frequency. The elevation of temprature (usually after a brief fall) begins within half an hour after the puncture, attains a febrile height, and persists sometimes for days. As no observations exist as to the heat-regulation of these animals, I have made experiments on rabbits after puncture of the caudate nucleus by placing them in a cold environment and in a box heated to various temperatures, and I find that their power of temperature-regulation is less than that of normal animals. These animals, in a word, present all of the essential symptoms of fever, and I do not know why we should not call the condition fever. If so, we must admit that injury to a circumscribed, definite region of the brain is capable of causing fever. This experiment, therefore, is of the greatest importance in support of the neurotic doctrine of fever. It indicates, of course, that we may have fever of purely nervous origin without any pyrogenic agent in the blood. This experimental evidence is supported by the clinical cases collected by White in "Guy's Hospital Reports" (1884). It is to be hoped that by careful thermometric study of focal brain and cord lesions a more accurate idea may be reached than is now possible of the topography of the thermically active regions in the central nervous system of man.

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* Ott, "Journal of Nervous and Mental Disease," April, 1884; "Medical News," July, 1885; "Therapeutic Gazette," Sept., 1887; Richet, "Arch. de phys.," 1884; Aronsohn u. Sachs, Pflüger's "Archiv," Bd. xxxvii; Baginsky u. Lehmann, Virchow's "Archiv," Bd. cvi; Girard, "Arch. de phys.," 1886.

† Corin et van Beneden, "Arch. de biologie," 1887.

* Murri, "Teoria della febbre," Fermo, 1874.

Admitting the dependence of fever upon the nervous system, I do not regard as particularly profitable with our present knowledge the discussion as to whether febrile thermogenesis is excited by the withdrawal of thermo-inhibitory impulses or by the stimulation of thermo-excitory nerves or nerve-centers. If we regard, and there are forcible arguments for doing so, the heat-inhibitory nerves as anabolic and the heat-exciting nerves as katabolic, then, inasmuch as the formative, or anabolic, processes are manifestly in abeyance in fever, we can reasonably infer that the function of the heat-inhibitory nerves is impaired. The phenomena of the febrile chill, in which both the contractile and the thermogenic properties of muscle are stimulated, speak strongly in favor of direct irritation of the heat-exciting nerves in fever. We might infer, therefore, that both sets of nerves were affected.

But my aim in this lecture has been not so much to construct a theory of fever—a theory which, although it may be useful, must necessarily be largely speculative if it is coherent and rounded—but to bring before you the main facts concerning heat-production, heat-loss, and heat-regulation in fever, and to point out the physiological basis on which their solution is to be expected.

Hyoscine in Convulsive Affections.—Erb ("Therapeut. Monatsheft") has employed this alkaloid in a variety of convulsive disorders, notably in paralysis agitans. The average dose employed was a quarter of a milligramme, given by the mouth or hypodermically. In several severe cases of paralysis agitans he was able to suppress the trembling for several hours, and in some cases for half a day. In other convulsive diseases, such as tetanus and hemiplegic chorea, good effects were observed.

Original Communications.

SALOL IN DIARRHŒA.*

By O. T. OSBORNE, M. D.,
NEW HAVEN, CONN.

ONCE more I bring this drug to your notice because I have more largely experimented with it, and because I believe it to be of real value for a class of cases in which, perhaps, only a few physicians have tried it.

I will first briefly sketch the properties and history of salol as they are so well compiled and set forth in a pamphlet issued by W. H. Schieffelin & Co. "Salol," or "salicylate of phenol"—or "Salicylsäurephenyläther," as Bielschowski, of Breslau, recklessly named it—was discovered by Professor von Nencki, of Berne, and was first brought before the profession as an aid in the cure of disease by Dr. Sahli, of Berne, in April, 1886. In the above-mentioned pamphlet appears the translation of the valuable notes of F. Ed. Georgi, M. D., of Goerlitz, Silesia, who has largely experimented with this drug. He describes salol as "a white crystalline powder, almost insoluble in water, nearly tasteless, and having a faint aromatic odor. It is soluble in ether, petroleum-ether, alcohol, fatty oils, etc. At about 43° C. (110° F.) it melts, and has then the appearance of a colorless, oily substance, which soon congeals. Its composition is such that it may be said to consist of 40 per cent. of phenol (carbolic acid) and 60 per cent. of salicylic acid. In the gastric juice salol is nearly insoluble, but it is decomposed into its two constituents after having passed into the intestine; it is eliminated from the body as sulphocarbolic acid and urosalicylic acid."

That salol is almost tasteless is due to its insolubility in the saliva. Salol is not irritant to the mucous membrane of the mouth or stomach.

Dr. Lombard, in the "London Medical Record" (November 15, 1887), reports a series of experiments with this drug upon animals. These experiments show positively that the principal solution and absorption of salol takes place in the duodenum, due to the action of the pancreatic juice. Large doses were not toxic. The phenomena noted were lowering of the temperature and increase of the rapidity of the respiration. There seemed to be no action on the circulation.

The advantages of salol as a drug, then, are the following: 1. It is tasteless. 2. It does not irritate the stomach. 3. It is not toxic. 4. It never produces dangerous symptoms, even with as much as one hundred and eighty grains per diem (Sahli), and it rarely produces even disagreeable symptoms.

Salol was first proposed as a substitute for salicylic acid in rheumatism, and as such has been most largely used.

Like all new drugs, however, salol has been tried and *consequently* (I use the word with all due thought, for who does not recommend the drug he has tried?) recommended for a large share of the ills to which flesh is heir, but I will not weary you with the list.

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* Read before the New Haven Medical Association, March 7, 1888.

In the "Therapeutic Gazette" for April, 1887, appeared a very complete review of the results of the principal experimenters with salol up to that date.

Three clinical observers—Dr. Bielschowski, Dr. Rosenberg, and Dr. Feilchenfeld—obtained marked benefit from salol in rheumatism, especially in acute rheumatism, although their results appear no better than when salicylic acid or salicylate of sodium is used.

There is this advantage, however: salol does not affect or irritate the stomach in any way, nor is it so likely to produce heart weakness as the sodium salicylate or the salicylic acid. "Still Dr. Bielschowski noted four cases," I quote from the "Gazette," "in which the action of the heart was slightly disturbed, disappearing, however, on the cessation of the administration ot the drug." According to Dr. Rosenberg, salol is as little able to prevent cardiac complications of rheumatism as salicylic acid is.

In this review it is stated that occasionally salol produces ringing in the ears, sweating, nausea, and vomiting, as salicylic acid does, and if it is pushed it causes the characteristic dark-colored urine of carbolic-acid poisoning. The latter fact is spoken of by almost all observers, but none mention the quantity of salol required to produce such urine, or whether the quantity varies in different individuals.

In my own experiments I have found ten grains to be the smallest single dose that would produce the slightest darkening of the urine, and that dose but rarely.

The dose of salol for acute inflammatory rheumatism varies from ten to fifteen grains every two hours until the fever ceases, and, according to Georgi, in every case of this large dosage carbol-urine appears.

Sahli finds a strong salicylic-acid reaction in the urine two hours after the ingestion of the dose.

I have endeavored to ascertain if this reaction was constant after the ingestion of salol, and with what doses it was obtained. To this end I have given single doses to perfectly healthy subjects, and have then examined the urine passed at various intervals after the ingestion.

I will not go into the details of the many experiments, but will give a summation of my results, and I desire here to express my thanks to Dr. H. E. Smith (professor of chemistry and dean of the faculty of the Medical Department of Yale University) for his assistance in the technique of the urine examination.

I found the strongest reaction of salicylic acid in the urine to appear in that passed about four hours after a dose of ten grains, and then to gradually disappear from the urine. The shortest interval at which I have obtained even a faint reaction after a dose of ten grains was one hour, and the longest period that I have still obtained traces of salicylic acid after one dose of ten grains was eighteen hours. I have obtained a distinct reaction in the urine after only one grain was taken, showing the positiveness of salol breaking up in the intestine into its constituents, and distributing its salicylic acid through the organism.

The outcome of the experiments of Georgi, Sahli, Bielschowski, Rosenberg, Feilchenfeld, Herrlich, and others seems to be that salol is of great benefit in acute rheumatism in relieving the pain and reducing the swelling, but it does not prevent relapses or heart complications, although Georgi, at least, professes to have prevented recurrence by continuing the salol for some time in reduced doses.

According to Georgi and Sahli, the antipyretic dose of salol is from fifteen to thirty grains, the reduction of the temperature beginning two or three hours after the ingestion. It is a useful antipyretic in all fevers.

Bielschowski highly lauds salol for muscular rheumatism, and Peiper ("Therapeutic Gazette," December, 1887), in the "Centralblatt für klinische Medicin," also recommends it for that purpose, having used it in the Leyden clinic. Peiper also says it was given as an antipyretic for fevers of all kinds, but where there was diarrhœa, that was not at all affected. In this latter statement he certainly does not coincide with the majority of observers.

Is salol an antiseptic?

This question is answered in the affirmative by many observers, and as such salol is recommended as a mouth-wash in all diseases of the mouth and as a deodorizer of the breath for ozæna, etc. (Georgi). It has also been recommended as a dressing for wounds (Mr. A. Norman Tate, "Pharmaceutical Record," March 15, 1887), and for simple and syphilitic ulcers, and it is even suggested as a substitute for iodoform.

On the other hand, Professor Dujardin-Beaumetz ("Therapeutic Gazette," October, 1887) declares salol not to be an antiseptic, and Miguel has shown by his researches that it does not prevent bacteria from developing in cultivation broths even when large doses are added.

If salol is an antiseptic, it has the advantage of being non-irritating. Although I have experimented somewhat toward that end, I have not yet proved to my own satisfaction that salol is an antiseptic.

As the solution recommended by Georgi as a mouth-wash is a solution of salol in alcohol, perhaps the deodorizing and disinfectant properties are entirely due to the alcohol.

I used a solution of salol in alcohol as a wash for a neglected suppurating wound with no other application whatever, and the wound healed very rapidly, but I am inclined to think a simple alcoholic wash would have done as well. Whatever may be said of salol *per se*, there can be no doubt that, after it breaks up in the intestine into its constituents, carbolic acid and salicylic acid, it is antiseptic to the contents of the bowels. For this purpose it has been used for bowel troubles of all kinds, and by Georgi is especially recommended for typhoid fever.

In a recent letter to the editor of the "New York Medical Journal" (December 10, 1887), Dr. Barnsfather professes to have had good results with salol in typhoid fever in three-grain doses every three hours.

My attention was first strongly directed to salol as an antiseptic and a cure for bowel troubles by the paper of A. H. Goelet, M. D., in the "New York Medical Journal" of August 6, 1887.

Dr. Goelet's strong assertion of its benefit in diarrhœal diseases, and the laconic ending of his article with "Try it and see for yourself," caused me to use salol in these troubles.

So far as I am aware, Dr. Goelet is correct in stating that he is the first writer to give formulated doses for children. I have tried his doses, and have found them to be correct, although I have not varied as greatly as he does with the difference of only a few months of age, and I have not found it necessary to give quite as large doses as he does. To a child of any age up to 2 years I give ·050 gramme; from 2 years to 5 years, ·100 gramme; 5 years to 12 years, ·200 gramme; and to all above 12 years I have found ·300 gramme a sufficient dose.

As Dr. Goelet urges, so have I found it to be necessary for immediate success in every case of acute diarrhœa to repeat the dose every two hours until the stools cease.

The indications for salol in bowel troubles are vomiting, purging, cramps, all so-called "summer diarrhœas" of children, and I have even found it successful in prolonged diarrhœas and in one case of dysentery.

I have used it the most largely in the diarrhœa and vomiting of children, and in every case with success, the stools immediately becoming infrequent, assuming their natural color, and losing their offensive odor.

I have used salol for diarrhœas of all kinds in twenty-two cases occurring in August and September of last year without a single failure, so far as I know. Three patients did not report to me after the first office visit, but I am confident, had they not been immediately cured, they would have returned on the next day. The remaining nineteen patients all reported cured.

I will briefly mention a few cases which present points of interest:

A woman, aged thirty-six, had had dysenteric bloody stools for a week. Treatment, ·300 grm. (4·6296 grains) of salol every two hours. Cured in one day.

A man, aged twenty-three, had had diarrhœa for six weeks, averaging five to six stools a day. Treatment, ·300 grm. of salol four times a day. Cured on the third day.

The youngest case in which I have used salol was a child, aged six months, with vomiting and purging. Treatment, ·050 grm. every two hours. Cured in one day.

The least number of doses that caused a cure was in a child, one year old, with purging that was cured with two doses of ·050 grm. (·7716 grain) each.

The case of acute dysentery before referred to was in a man aged forty. He had bloody and mucous stools for one week when he came under my care, having, he asserted, as many as sixty movements a day for the last two days, and, as a natural consequence, it was a very unfavorable case to treat. He has had attacks of dysentery every autumn for a number of years, but never so severe as this one. The treatment was ·250 grm. (3·858 grains) of salol, internally, every two hours (the patient was too weak to give large doses), morphine, whisky, and ice-water injections into the rectum. This treatment caused amelioration of the symptoms, but did not stop the tenesmus and the bloody stools. After using the ice-water injections for two days unsuccessfully, on the third day I ordered a four-per-cent. solution of salol in alcohol; to inject two teaspoonfuls in water as often as he felt the tenesmus coming on. My theory of this injection was founded on the fact that such salol washes had been found of service in ulcers of the mucous membrane of the mouth, and they might prove of service in the ulcers of the bowel.

The patient professed to have immediate relief from the tenesmus after the injection, and the *next day* he passed no blood, and fæcal matter appeared in the stools. On the fifth day of the treatment the salol internally was stopped; on the sixth day I stopped the injection, and reduced the morphine and whisky. On the eighth day of treatment I renewed the salol internally, which had not been used for three days, as he had a slight diarrhœa, and gave it for three days.

On the fourteenth day after treatment began I surprised him out-doors eating bananas, with a history of having eaten raw beef, and a pretty generous diet for the last four or five days, with no complaint from the bowels.

I regret that I have had no case of acute dysentery since, in which to try the salol injections, but, although the salol may have had nothing to do with the cure, it appeared to relieve the tenesmus and to stop the loss of blood, and certainly deserves a further trial.

I will cite one more case:

A boy, aged sixteen, had had diarrhœa and cramps for two days. I gave him ·300 grm. (4·6296 grains) of salol four times a day. The next day there was no improvement, and the salol was increased to ·300 grm. every two hours. He was immediately cured of both cramps and diarrhœa, showing the necessity of the frequent repetition of the dose, which I have many times demonstrated. On the same day that the stools ceased, his face and body were covered with an eruption of erythema. Was the erythema due to the intestinal irritation, or to the salol? As his previous diarrhœa should have removed an irritating substance in the bowels, and as I could not trace it to the ingestion of any food-stuff, it may have been due to the salol. At all events, the salol was stopped, and the eruption rapidly disappeared.

Except in the case just mentioned, perhaps, I have seen unpleasant symptoms positively due to salol in only two instances.

In one case there was a simple headache after ·600 grm. (9·3592 grains) had been taken. The other case was that of a woman, aged thirty-seven, who had had diarrhœa and abdominal pain for a week. She misunderstood the directions, and took ·300 grm. (4·6296 grains) every hour, until she had taken 2·400 grm. (37·0368 grains) in eight hours. She showed symptoms of intoxication—such as muscular weakness, faintness, and dizziness. These symptoms rapidly disappeared on the cessation of the salol.

I have not given my experience with salol in rheumatism, because so much has already been written upon that subject, but when I give it for that disease I never omit the alkalies.

As to salol in these diarrhœal troubles, I can not better end my paper than Dr. Goelet ended his, with, "Try it, and see for yourself."

I must emphasize the fact that all of my patients, except the one with dysentery, were cured without opium in any form, and with no other medication than the salol. As you have seen, salol allays vomiting, although it is insoluble in the gastric juice; it may be due to an antiseptic action of the salol *per se*.

Alum in Typhoid Fever.—"Dr. Paoletti," says the "British Medical Journal," "has treated sixty cases of typhoid fever, with excellent results, with crude alum alone. He remarks that this drug had formerly been used only as a styptic and an astringent, but now that its antiseptic properties had been recognized it was clearly indicated as a remedy for abnormal fermentations in the intestinal canal."

A CASE OF
HYDATID CYST OF THE LIVER.

By PEARCE KINTZING, M. D., and J. W. LORD, M. D.,
RESIDENT PHYSICIANS TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

The rarity of the following case, the peculiarity of the symptoms, and the kindly interest manifested by some of the most prominent scientists of this city, are the writer's excuses for bringing it before the medical profession.

On December 9, 1887, Thomas H., an Englishman, aged twenty-one years, who had been in America three months, during which time he had worked on the Pennsylvania Railroad, was admitted to the house. He complained of sharp pain in the right costal and hypochondriac regions, and attributed it to a cold, the result of a severe wetting which he had received three days previous to admission. He had a hard, dry cough, pain on deep inspiration, and a temperature of 100·6° F.; pulse, 80; respirations, 30.

On auscultation, a moderately rough friction sound, synchronous with respiration, could be detected over a considerable area on the right side, and the area of dullness extended from the lower border of the ribs to the fourth intercostal space. Bulging was observed over the area indicated, but was most prominent from the fourth to the seventh ribs. No fremitus, skin and conjunctiva clear, constipation obstinate. Calomel in quarter-grain doses was administered hourly. A blister was applied, and by the evening of the second day the temperature had fallen to normal, where it remained until the sixth day, by which time pulse and respiration had also returned to normal. Between the sixth and the fourteenth days fever of intermittent type was present, and the 101° line was passed upon three evenings. On the fourteenth day aspiration was decided upon, and a hypodermic-syringeful of clear serum was removed, but two thrusts of a three-inch trocar failed to bring any liquid. The points selected were at the angle of the scapula. During this febrile period the pulse and respiration remained about normal, and after the fourteenth day the temperature fell to 97°, and ranged between 97° and 98° until the twenty-seventh day, when observations were discontinued for twelve days following. The patient then became moderately jaundiced; the urine contained bile-acids but no pigment. The temperature rose to 102·5° and respirations to 40, but, as each fell to normal on the following day, tapping was not resorted to, although dullness now extended from a hand's breadth below the lowest rib to the third interspace, and even to the second when the patient inclined forward. Constipation during this period was extreme, and the stools were exceedingly fœtid. On the forty-seventh day after admission the temperature rose from 98° to 101·5°, and aspiration was again resorted to, at the seventh interspace in the mid-axillary line. Nine fluidounces of pus were removed, when the flow suddenly stopped. A four-inch trocar was reinserted, but failed to find any more liquid. After this operation both pulse and respiration fell to normal, and the temperature fell to 100°. Microscopic examination of pus removed revealed hooklets of Tænia echinococcus, pus-cells, compound granule cells, large cells containing oil globules, cholesterin crystals, and pigment granules. A diagnosis of echinococcus cyst was now evident, but before surgical interference could be resorted to the patient died.

At the post mortem it was found that the liver was firmly attached to the diaphragm over its entire right lateral surface, by reason of perihepatitis, and the apex of the right lobe reached to the third interspace in the axillary line. There were no adhesions to the peritonæum elsewhere. The entire right lobe of the liver was converted into a purulent cyst, and was absolutely devoid of liver structure, only the much-thickened capsule remaining. The cyst was lined with an elastic, gelatinous membrane, four lines in thickness, striated, and studded with opaque dots. It was not adherent to the capsule of the liver, and, when a trocar was thrust through the liver capsule, the elastic cyst-wall was pushed before it, instead of being penetrated. From the interior of the cyst one hundred and seven fluidounces of liquid which had undergone purulent degeneration were removed. Upon standing, the fluid separated into a supernatant liquid, greenish yellow in color, turbid and partially coagulable, and a sediment which has already been described. Three daughter-cysts were also found floating free in the liquid, of about the size of pigeon's eggs. These contained the clear liquid filled with scolices—no hooklets and no pus-cells—and these were pronounced by Dr. Joseph Leidy, Sr., the eminent authority upon parasites, after microscopic examination, to be acephalocysts. The gall-bladder was filled with the same clear liquid, and was much distended; its duct was occluded. The stomach was pushed to the left parietal wall, and its axis was vertical. The two lower lobes of the right lung were collapsed and carnified. The upper lobe was crepitant. The pleural sac contained a pint of serous effusion. The specimens were exhibited before the College of Physicians of Philadelphia and the Philadelphia Pathological Society, and commented upon, as to the rarity, the unusual size, and the diagnosis, by Professor Leidy, Professor Osler, Dr. Formad, and others present.

Correspondence.

LETTER FROM PARIS.

Phosphorus and Salt-water Baths in the Treatment of Rhachitis.—The Hereditary Effects of the Alcoholic Habit.—Chloride of Methyl as a Local Refrigerant.—Carbonic-acid Gas in Dyspnœa.—A Proposed Plan for furnishing Infants with Pure Milk.—The Prevention of Syphilis.

Paris, *March 12, 1888.*

As considerable mention had been made of a new treatment of rickets by phosphorus, first proposed by Kassowitz, of Vienna, Dr. Comby, one of our hospital physicians, has been trying the plan for some fifteen months past. He gave cod-liver oil which contained ten centigrammes (1·5432 grains) of phosphorus to the quart. This was administered to forty children, aged from ten to thirty months, who were suffering from rickets. The youngest took from one to two teaspoonfuls of the phosphorized oil, and the larger children had up to four teaspoonfuls in the twenty-four hours, so that a milligramme (·015432 grain) of phosphorus was given each day, on an average. This treatment was kept up for from three to six months, and in one or two cases for a year. All the cases were very severe ones, care being taken to throw out those simple ones that often are cured under any treatment. No trouble came from the remedy itself, and the results in the forty cases so treated were as follows: Twenty-one patients were somewhat improved, or at least there was some slight amelioration, varying according to the case; eighteen remained about the same; and one grew worse. In the most favorable cases the curved bones did not straighten in any way. In order to compare this form of treatment, forty other children with rickets were kept under treatment principally by salt-water baths, to which in a few cases some cod-liver oil was added, and in one or two cases phosphate of lime was given as well. This second lot of forty children gave the following results: Thirty-four of them were very much improved, two were completely cured, and in four there was no change; none died. It will be seen from these results that the opinion is confirmed that the use of the salt-water baths is the best treatment for rickets, and all other forms of medication must take the second place. The French Government has recognized this important fact, and it is now extending the system of sending such children to sea-side hospitals for treatment. The splendid results obtained at the first hospital of this kind established, at Berck-sur-Mer, has led to the erection of new ones at Arcachon, and also on the Mediterranean coast. If some of your New York millionaires would erect such buildings on Coney Island or out on Fire Island, it would save the lives of many children.

Some experimental researches made by M. Mairet and M. Combemale, and just communicated to the Academy of Sciences, on the degenerative influence of the use of alcoholic liquors on descendants, are very interesting. It may perhaps be a little premature to draw conclusions from animals to man, but the facts given are very striking as to the hereditary effect of alcoholic habits. A male dog was first experimented upon, and he was kept intoxicated with absinthe for a long time until he was in a chronic state of alcoholism; he was then permitted to have connection with a perfectly healthy young bitch. She gave birth to twelve puppies, two of which were born dead, and the rest died from various pathological troubles within two months of their birth. Some had epileptic attacks, others had intestinal troubles, and several had pulmonary or peritoneal tuberculosis. Careful autopsies were made, and in all the cases lesions were found showing alcoholic degeneration, thickening of the cranial bones, adhesions between the dura mater and the skull bones, difference in weight between the two cerebral hemispheres, and fatty degeneration of the liver.

The second trial was made on a vigorous female dog, which, during the last three weeks of gestation, was kept in a state of intoxication with alcohol. She gave birth to six puppies, three of which were dead. The three living ones were not badly formed, but were not at all intelligent. The third one of them was a female, and great difficulty was found in raising her. This showed the influence of alcohol on the first generation. In order to show its effect on the second generation this same slut was kept, and in due course was impregnated by a healthy male dog, by which she had three puppies only. One of them had club-foot and an atrophy of several toes; another died of atrepsy, and had patency of the foramen ovale of the heart; the third had atrophy of the hind legs and tabes mesenterica. Strong arguments might be drawn from these experiments for temperance societies and hygienic use, but it may be well to await the final results of this form of study, which is to be followed up.

It will be remembered that Dr. Debove recommended the chloride of methyl in sciatica some two years ago, and since that time the little iron and brass jars containing that gaseous substance, condensed, have been a familiar sight in the hospitals; but it was remarked that, besides the bad smell of the product, it was not always easy to apply the local refrigeration to all painful parts. This trouble has now been remedied by Dr. Bailly, who has invented a very good pad made of rough silk refuse, which is covered with silk gauze. The little pad is attached to a handle, and it is made now in all sizes. Professor Dieulafoy, in a lecture given at the faculty of medicine, said that with these pads we had now a most effective means of applying refrigeration to any part of the body. He showed a number of the pads, and they were held for a moment before the chloride of methyl to impregnate them with that body (which boils at 23° C. [=73·4° F.]), and then passed among the audience, with directions not to press hard, but to lightly touch the back of the hand. The cold feeling was intense, and it remained on the pad for a long time. The effects are variable, of course, according to the time that the pad is held in contact. If it is only for a second or two, a feeling of cold is produced that is followed by a local stimulation; on pressing harder, a local anæsthesia is produced, the part is pale, and the reaction that follows is much stronger, as it produces a congestion. Wherever local refrigeration is of service these little round pads are coming into use. Although they have only been placed on sale in this market during the present week, the demand for them is already great.

Dr. Weill proposes to use carbonic-acid gas to combat dyspnœa. He says it was suggested to him when observing the experiments of M. Brown-Séquard on the inhibitory effect of a current of that gas on the larynx. He gives the gas pure, for from two to five minutes at a time, using from two to five litres, once or twice a day. No bad effects are noticed, and the patients are all improved by the action of this gas, which we have all thought so dangerous. The patients treated were mostly tuberculous ones, who had an attack of laryngitis and serious lesions of the lungs. They had a slight oppression, but continuous, with attacks of coughing, lasting from twenty minutes to half an hour, followed by severe dyspnœa. The inhalation of carbonic-acid gas cut short these attacks, and, when given between the attacks, it seemed to prevent their occurrence, and certainly diminished their frequency and intensity. The same favorable effect was noticed in cases of emphysema.

The *Société de médecine pratique*, while recognizing that mother's milk is the best for children, can not, however, overlook the fact that an immense majority of babies are nowadays brought up on cows' milk, and, as they are of the poorer classes, who can not pay enough to secure pure milk, it begs the city government to take the matter in hand, and to construct and maintain model dairies, as is the practice in the towns of Stuttgart and Hamburg. A call is made upon the patriotism of the French Government to adopt this plan of securing pure milk for the babies, whose numbers are being diminished by thousands every year, and the hope is expressed that the city will undertake the important work of supplying pure milk at a low price for all the poor babies of Paris. It is not a bad idea if it could be carried out without making a job of it, as would be the result in some countries if it was a government affair.

The *Académie de médecine* is discussing the question of preventing syphilis by a law making it a criminal offense for a woman to solicit custom in the streets publicly by what they call "provocation," but here they come in conflict with the lawyers, who can not admit that it is possible to define what constitutes such a provocation to vice as can be punished by law. The question of individual liberty is so closely allied to the matter that it is difficult to repress what is certainly public vice, and thus prevent syphilis as much as possible, and at the same time not interfere with the rights of citizens. It is thought that some restricted form of examination and registration of public women will follow the discussion now going on, and certainly it will have the effect of stopping the practice of imprisoning women with syphilis, as is now done, instead of treating them in a hospital as ordinary patients.

Poisoning by Artificial Selters Water.—"Over thirty cases of poisoning," says the "British Medical Journal," "were reported recently in Rendsburg, in Germany. Inquiry showed that only those were poisoned who drank freely of Selters water, and an examination of this water revealed the fact that it contained a very appreciable amount of arsenic. The water was a manufactured product, and had been imported from another city."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by
D. Appleton & Co.
Edited by
Frank P. Foster, M. D.

NEW YORK, SATURDAY, APRIL 7, 1888.

THE NEW YORK ACADEMY OF MEDICINE.

Last week we published the text of a circular issued by the Subscription Committee appointed to solicit funds to provide for the purchase of land and the erection of a new building for the Academy. In that circular the facts of the case were so cogently set forth that there is little to be said in addition. The public may fear, however, that before many years have passed the Academy may outgrow any building that may be provided for it, as it has already outgrown the house which it acquired but a few years ago. This fear, we think, is groundless. The membership is not likely to go on increasing *ad infinitum*, certainly not in the ratio in which it has grown during the presidencies of Dr. Jacobi and Dr. Barker; so that there is not much danger that such a building as it may be expected to erect would within a generation or more prove insufficient for the meetings. But the library is probably destined to grow out of proportion to the increase of membership, and it is chiefly for the sake of the library that ampler accommodations are now needed. The Academy's library, however, is of a character to admit before long of a weeding-out process that will for many years restrict its absolute growth, while it will improve its quality. The value of a public library is not to be measured by linear yards of shelves; in proportion as libraries grow old and really valuable the need of additional shelf-room is apt to be felt in a decreasing ratio. Indeed, in the history of a well-managed library there comes a time when it may almost be said to cease to grow and begin to ripen. Twenty years hence—and, we hope, sooner—the Academy will have ceased to add to its library the miscellaneous collections of deceased members and to gorge its shelves with the good, bad, and indifferent text-books and pamphlets issued by contemporary writers, and become what it ought to be, a repository of rare and ordinarily inaccessible books and complete sets of journals. It is important, of course, that its files of journals should be kept up, but we may hope that by that time it will have acquired all the old ones that it can be expected ever to get, and therefore to be rid of the necessity of storing duplicate and triplicate copies for purposes of exchange. It is not to be doubted that such considerations will eventually govern the management of the Academy's library, and, that being the case, the Subscription Committee's statement that, "this building once paid for, there will be no further occasion for us or our successors to call upon the liberality of our fellow-citizens" seems perfectly justified.

Medical men throughout the country, and indirectly the community at large, will profit by the prosperity and heightened capacity of the Academy. It is justified, therefore, in its appeal to the public for funds, and we hope that our readers will not fail to represent its needs and its worthiness to the men of wealth to whom they may have access. There ought to be little difficulty in its acquiring within a reasonable length of time the additional quarter of a million dollars needed to enable it to provide itself with suitable quarters.

THE USE OF RHAMNUS IN HABITUAL CONSTIPATION.

At the last revision of the United States Pharmacopœia this remedy was added to the already large list of cathartics. The *Rhamnus frangula* is a member of the buckthorn family, and is found in Europe and Central Asia, but not in the extreme northern portions. It is found in hedges and bushy places, and attains a height of ten or fifteen feet. The bark, which is the part of the shrub used, is about one twenty-fifth of an inch in thickness; the outer surface is grayish-brown, with numerous small whitish warts upon it, and the inner surface smooth and of a pale brownish-yellow. It is inodorous, and has a sweetish bitter taste. According to the "Ephemeris" for October, 1887, the supply comes from Germany, where the branches, after having been stripped of the bark, are used in making charcoal for the production of gunpowder. The bark is peeled off easily when the "sap is flowing," which is in June and July. These circumstances are very advantageous to its use in the materia medica, for they insure the collecting and drying of the bark of only the branches, and also at the best time of the year.

Frangula has been official in Germany for several years, and has been admitted into the United States and British Pharmacopœias recently. If the bark is used when first collected from the branches, it acts as a drastic cathartic, causing nausea, vomiting, and violent purging. On this account the Pharmacopœia says that the bark is to be at least a year old, for after drying for this length of time it loses its irritating properties and acts as a mild aperient. Its action is sure, although slow, and is easily regulated according to the results obtained. It does not disturb digestion, but, on the contrary, acts as a tonic to the stomach and bowels. It has no secondary constipating effect like some remedies, and does not cause anorexia, but rather increases the appetite. The stools caused by frangula are soft, but not watery, if it is used in proper doses.

It is not suitable simply for an evacuant, not having so good an effect as rhubarb or senna. It is in habitual constipation that it is of special value. In cases of hæmorrhoids it causes a soft movement and soothes the irritated condition of the parts. In the severe constipation occurring in many paralytics it is said to act like a charm, and to be one of the best remedies in gynæcological cases.

The dose of the fluid extract is from fifteen to thirty minims. In cases of habitual constipation in women it is better to give ten minims four or five times a day, and then increase or diminish each dose according to the results obtained. It is found to have a better effect to vary the size of each dose than to vary the number of doses taken during the day. After the right amount has been ascertained, the use of this quantity should be kept up for a week or more, and then the amount of each dose gradually diminished until its use is stopped. After this, in most cases the bowels will remain soluble. If the constipation returns, the remedy can be used again in the same manner. In the case of men the dose should be larger than for women. In the use of the remedy the principal thing is to find the proper dose. Dr. Jacob Bigelow once said that a great deal of the success of a physician depended on his understanding the constitution of his patient; in other words, how large a dose of cathartic medicine it took to move his bowels.

The *Rhamnus purshiana* (*Cascara sagrada*) has been more used in this country than frangula. In our issue for March 3d we published an account of recent investigations of its properties, summarized from the "American Journal of Pharmacy," and mentioned certain tests that were being carried on in Messrs. Parke, Davis, & Co.'s laboratory, which they expected would finally demonstrate its superiority over *Rhamnus frangula*. In the "Deutsche Medizinal-Zeitung" for March 5th a contributor (apparently a member of the staff) remarks that, while *Rhamnus frangula* is holding its own in the esteem of the German profession, it can not be denied that *Cascara sagrada* seems to have some advantages, and that it is likely to come into use in Germany.

MINOR PARAGRAPHS.

THE IMPORTANCE OF LACERATIONS OF THE UTERINE CERVIX.

COMMENTING lately on some very remarkable propositions embodied in a paper read at a recent meeting of German naturalists and physicians, by Dr. Noeggerath, formerly of New York, belittling the importance of lacerations of the cervix uteri, we expressed our expectation that some American gynæcologist would before long bring forward a convincing controversion of that gentleman's inferences. In the March number of the "American Journal of Obstetrics and Diseases of Women and Children," Dr. Brooks H. Wells, of New York, does this most effectually. He considers Dr. Noeggerath's conclusions *seriatim*, and opposes them with well-observed facts. Whoever is inclined to doubt the seriousness of these injuries will do well to read Dr. Wells's article.

PEPPER'S "SYSTEM OF MEDICINE."

WE are gratified to note the appreciation which this excellent work is meeting with abroad, not the least significant token of which is the announcement of its forthcoming publication in Italian by the well-known house of Dr. Francesco Vallardi, of Milan, Rome, Naples, Bologna, Florence, Padua, Turin, Palermo, and Catania.

THE NEW YORK QUARANTINE.

WHAT, if anything, is to be done to remedy the present disgraceful state of the quarantine station, or to reform the methods of its administration, it is impossible to say. The State Legislature seems to view the matter in no other light than as affording an opportunity for one political boss or gang to get the better of another, utterly oblivious that the nation is looking on with disgust. The Mayor of New York has written a letter to the chairman of the Finance Committee of the State Senate, urging the appropriation of $200,000 for the work of putting the station in order, and he suggests that the city Board of Health is capable of taking charge of the establishment for the present, in case the Legislature should see fit to give it over into the control of the municipality. The idea is not a bad one, although it is something of a novelty for the city to be looked to to save the State from disgrace.

FORCED RHYTHMICAL BREATHING AS A REMEDY FOR SEA-SICKNESS.

Dr. J. J. LEISER, having pondered upon the well-known impulse felt by many persons to breathe irregularly, as the result of the sensations induced by a ship's motions, and, in particular, to hold the breath as the vessel rises or falls, has come to the conclusion that this disturbance of the respiratory rhythm amounts in many cases to such an insufficiency of respiration as to involve inadequate aeration of the blood to a degree great enough to poison the brain for the time being. In a communication to the "British Medical Journal," he supports his theory with a letter signed by Dr. G. C. Stockman and Dr. C. W. C. Prentice, in which those gentlemen give an account of certain very satisfactory tests to which they put it on a recent trip across the Atlantic in the steamship Etruria. The remedy is simple—to take full and rhythmical respirations, not fewer than twenty to the minute, breathing as one would perform a piece of music, by count.

THE "INDEX MEDICUS."

WE regret to learn that this most creditable publication is not yet self-supporting, and we would again urge upon the profession that sufficient support should be given it to insure its continued existence. Its publishers, past and present, have shown an amount of self-sacrifice that can not be expected to be kept up for ever. According to a statement published in the "Therapeutic Gazette," it had in January only 363 subscribers, more than half of whom were residents of foreign countries. It ought to be a matter of national pride with us to sustain a publication of such unique character and value.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 3, 1888:

DISEASES.	Week ending Mar. 27.		Week ending Apr. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	13	3	11	4
Scarlet fever	145	20	177	23
Cerebro-spinal meningitis	1	0	3	2
Measles	59	1	49	4
Diphtheria	127	45	119	36
Small-pox	20	1	28	4

The Health of Brooklyn.—During the three months ending Saturday, March 31st, the following numbers of cases and deaths from infectious diseases have been reported to the Board of Health: 1,057 cases of scarlet fever and 189 deaths; 808 cases of diphtheria and 326 deaths; 259 cases of small-pox and 46 deaths; 127 cases of measles and 8 deaths; 34 cases of typhoid fever and 14 deaths.

The New York Neurological Society. — At the annual meeting held on the 3d inst., officers were elected as follows:

President, Dr. George W. Jacoby; first vice-president, Dr. C. L. Dana; second vice-president, Dr. M. A. Starr; recording secretary, Dr. B. Sachs; corresponding secretary, Dr. E. D. Fisher; treasurer, Dr. G. M. Hammond; councilors, Dr. L. Weber, Dr. E. C. Seguin, Dr. J. C. Shaw, Dr. W. R. Birdsall, and Dr. E. C. Harwood.

The Clinical Society of the New York Post-graduate Medical School and Hospital.—At the meeting to be held this (Saturday) evening, at the college building, No. 226 East Twentieth Street, there will be a discussion on "Rational Methods of Treating Stricture of the Male Urethra," to be opened by Dr. J. H. Girdner. We are asked to state that members of the profession are invited to be present.

The Rush Medical College, of Chicago.—It is announced that Dr. Nicholas Senn has been appointed professor of the principles of surgery and surgical pathology.

The Medico-chirurgical College of Philadelphia held its seventh annual commencement exercises on Friday evening, the 6th inst., at Association Hall. On the preceding evening Surgeon-General Hamilton, of the Marine-Hospital Service, delivered the annual oration before the Alumni Association, in the college building, after which a dinner was given by the association in Dr. Hamilton's honor.

The Middleton Goldsmith Lecture of the New York Pathological Society will be delivered at the Academy of Medicine on Wednesday evening, the 18th inst., at 8 o'clock, by Dr. J. M. Da Costa, of Philadelphia, on "The Relation of the Renal and Heart Affections." We are asked to state that the profession is cordially invited to attend.

The Boston Medical Library.—It is announced that Dr. Oliver Wendell Holmes has given his medical books to the library.

The Death of Dr. Martineau, of Paris, the well-known physician to the Lourcine, is announced in our French exchanges. M. Martineau was fifty-two years of age. The "Progrès médical" states that he bequeathed his property, after the death of his mother, to the *Association générale des médecins de France.*

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 18 to March 31, 1888:*

Forwood, W. H., Major and Surgeon. Granted one month's leave. S. O. 20, Department of Dakota, March 10, 1888.

Baxter, J. H., Colonel and Chief Medical Purveyor. Will proceed to Augusta Arsenal, Ga., on public business. S. O. 62, A. G. O., March 16, 1888.

Greenleaf, Charles R., Major and Surgeon. Will proceed to Cambridge, Mass., on official business. S. O. 62, A. G. O., March 16, 1888.

O'Reilly, R. M., Major and Surgeon. Will proceed to York, Pa., and make an examination of Captain Edw. B. Rheem, Twenty-first Infantry. S. O. 62, A. G. O., March 16, 1888.

Wyeth, M. C., Captain and Assistant Surgeon. Granted leave of absence for two months, to take effect about April 1st. S. O. 65, A. G. O., March 20, 1888.

Brown, H. E., Major and Surgeon. Assigned to temporary duty at Fort Barrancas, Fla., during the absence on leave of Assistant Surgeon M. C. Wyeth. On the return to duty of Captain Wyeth, Major Brown will rejoin his proper station. S. O. 65, A. G. O., March 20, 1888.

Worthington, J. C., Captain and Assistant Surgeon. Granted leave of absence for four months, to take effect May 15th, or as soon thereafter as his services can be spared. S. O. 65, A. G. O., March 20, 1888.

Kimball, J. P., Major and Surgeon. Granted leave of absence for two months, to take effect about April 10, 1888. S. O. 68, A. G. O., March 23, 1888.

Crosby, W. D., First Lieutenant and Assistant Surgeon. Granted leave of absence for two weeks. S. O. 29, Department of Arizona, March 16, 1888.

Died.

Azpell, Thomas F., Captain and Assistant Surgeon (retired). Died March 12, 1888, at Fort Lee, N. J.

Spencer, William C., Major and Surgeon. Died March 22, 1888, at Fort Trumbull, Conn.

Society Meetings for the Coming Week:

Monday, *April 9th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *April 10th:* Medical Association of Alabama (first day—Montgomery); Medical Society of the State of Tennessee (Knoxville); New York Medical Union (private); Medical Societies of the Counties of Jefferson (quarterly—Watertown), Oneida (quarterly—Utica), Ontario (quarterly), Rensselaer, and Tioga (quarterly—Owego), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Medical Societies of Bergen (annual—Hackensack) and Cumberland (annual) Counties, N. J.; Fairfield, Conn., County Medical Association (annual).

Wednesday, *April 11th:* Medical Association of Alabama (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Tri-States Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society (conversational).

Thursday, *April 12th:* Medical Association of Alabama (third day); New York Laryngological Society; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga and Fulton (quarterly), N. Y.; South Boston, Mass., Medical Club (private); New London, Conn., County Medical Society (annual); Pathological Society of Philadelphia.

Friday, *April 13th:* Medical Association of Alabama (fourth day); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *April 14th:* Obstetrical Society of Boston (private).

OBITUARY NOTES.

Benjamin Frederick Dawson, M. D., died on Tuesday, the 3d inst., at his home, in East Fifteenth Street. For a number of months it had been known that his health was seriously undermined by diabetes. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1865. He was a member of the Academy of Medicine and of the Medical Society of the County of New York. For many years Dr. Dawson had been active in promoting the cultivation of gynæcology and pædiatrics in New York. Until within a short time before his death he occupied the position of an assistant surgeon to the Woman's Hospital, in which his work was always faithful and earnest; he founded a dispensary for sick children, to the sustaining of which he gave not only his professional services, but also much pecuniary aid; he was one of the original members of the Obstetrical Society; and he was the founder, and for several years the owner and editor, of the "American Journal of Obstetrics and Diseases of Women and Children." He was esteemed no less for his genial and chivalrous qualities than for his professional energy and ability.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of March 7, 1888.

The President, Dr. S. Weir Mitchell, in the Chair.

Successful Simultaneous Triple Amputation for Railway Injury, with Remarks on the Technique of Multiple Amputation.—Dr. John Ashhurst, Jr., showed a patient and spoke as follows:

This patient is brought before the college largely on account of the rareness of simultaneous triple major amputations. It is quite possible that some of the Fellows may not have had an opportunity of seeing such a case.

The patient is a Moor, twenty years of age. He was admitted to the University Hospital, November 28, 1887, having been run over on the Pennsylvania Railroad. I saw him within two hours after his admission. I found a compound comminuted fracture of the right leg, the laceration extending above the knee; complete avulsion of the left leg, the limb having been torn off in its lower third; and a compound fracture of a severe character of the right hand and wrist. There was also a compound fracture of the skull, involving the frontal bone. This, however, was an impacted fracture, of course without much depression, and did not require interference. In addition to these injuries, there were numerous brush-burns and contusions, some of a grave character. One upon the left buttock was so severe that the separation of the slough left a cavity fully two inches in depth. Notwithstanding these serious injuries, the patient's general condition was very good; he had reacted thoroughly, and his axillary temperature was 99° F. Under these circumstances, I felt justified in proceeding to the immediate removal of the injured limbs, and amputated successively the right thigh by the anterior-posterior flap method; the left leg, about its middle, by a modified Sédillot's external flap operation, the modification consisting in making both flaps from without inward, instead of cutting the external flap by transfixion; and the right forearm by an oval incision, making use of the uninjured skin of the back of the hand and wrist. Certain variations from the ordinary procedure in amputations I shall refer to when I come to speak of what I have ventured to term the technique of multiple amputations. After the operations were completed, the temperature had fallen only to 98° F. The patient had no bad symptom and rapidly recovered, and as you see him now all his wounds are perfectly healed, and he is entirely well.

I have collected some statistics of synchronous multiple amputations. I am able to find but one instance of *quadruple* synchronous amputations—a case in which the operations were done for frost-bite by Dr. George E. Jackson, of Dakota. There are several cases recorded of quadruple amputations, not synchronous, the one which approaches nearest to a synchronous operation being that of Champenois, a French surgeon, who amputated three limbs on one day and the fourth a few days later.

Of synchronous triple amputation there have been reported four successful cases, not including that presented to-night; one by Dr. Köhler, of Schuylkill Haven, Pa.; one by Dr. Lowman, of Johnstown, Pa.; and two referred to by Professor Agnew, in his "Surgery," one occurring in the practice of Dr. Stone, of New Orleans, and the other in York, the name of the surgeon not being given. There are reported four or five triple amputations not synchronous. I have myself resorted to synchronous triple amputation in two cases. Several years ago I had occasion to perform this operation, removing both legs and the right forearm of a man, aged forty-five years, of intemperate habits. The patient died on the tenth day, the fatal result being due rather to the visceral lesions resulting from alcoholism than to the operation.

Double amputations are comparatively numerous. I have personally performed fifteen such operations, this number not including two successful cases of double partial amputation of the feet. I have done fifteen double major amputations, of which five have ended in recovery. One of the patients who recovered I had the honor of exhibiting to the college some years ago; the amputations in his case were through the right hip joint and through the left leg. In the fatal cases, seven of the deaths occurred within less than one day, and were therefore the immediate result of the shock of the injury and of the operation. Three patients died, one in three days, one in four days, and the third in eighteen days. The latter would probably have recovered, but that he also had suppurative disease of the middle ear, which appeared to be the cause of the pyæmia which proved fatal; for when the stumps were examined, after death, they were found to be in good condition.

With regard to what I have termed the technique of multiple amputations, there are some points which my experience justifies me in urging upon surgeons as of importance in promoting success. In the first place, it is very important that the time occupied by the operations should be brief; that the operations should be done systematically, so as to keep the patient under the anæsthetic as short a time as possible. The next point, perhaps of even more importance, is to keep up the temperature of the patient during the operations. I have been led to think that this is, perhaps, of more importance than anything else. Of course, loss of blood must be scrupulously guarded against, and loss of blood directly causes loss of temperature. In this case hot cans were kept around the patient during the entire operation; and, in order to save time, I operated systematically, the tourniquet and Esmarch bandage being both employed to prevent any loss of blood. I began with the most serious injury, and this is, I think, a point of importance. It may happen that, after the removal of one limb, it will be found that further operation must be postponed on account of the patient's condition, and then it is, of course, better to leave him with the less severe injuries. In this case I began with the thigh. After amputating the limb, I secured the main vessels, which were readily found. I attempted to tie the arteries with catgut, but, as the ligatures broke, I substituted silk, and, in order to save time, left both ends uncut. I next amputated the right leg, securing the vessels in the same manner, and then passed to the forearm. I then came back to the right thigh, screwed up the tourniquet and removed the Esmarch bandage, and secured all the vessels that required ligature, then passing to the other limbs in the same order as before. After the vessels had been secured in each case, a towel dipped in a hot antiseptic solution was placed between the flaps. The wounds were then dressed in the same order, and in this way the operation was completed in a comparatively short time.

The points which I have mentioned I believe to be of great importance, and I think that much of the disappointment of surgeons from these operations is due to a want of attention to these matters.

I should also say that, in order to preserve the bodily heat, I did not use irrigation during the amputations. I think that this often seriously reduces the temperature; and even in comparatively slight operations where it has been used, I have seen the temperature fall to 97° and even 95° F. I think that in any grave case it is better to omit it and to rely upon washing with hot antiseptic solutions before and after the operation. Also, the packing of wet towels around the seat of operation, as is very commonly done, tends to depress the temperature, and in grave cases should be omitted.

I think that it is to an observance of these precautions that I have owed success in this case, and in many other serious operations of various character.

Dr. **William Hunt** said that Dr. Ashhurst had dwelt upon the importance of saving time. There was one way in which time might be saved, and that was by more than one surgeon operating at the same time. Dr. Morton and he had done that on two occasions, each taking a limb and operating at the same time. He did not know how it would work with three.

Dr. H. C. **Wood** said, with reference to keeping up the animal heat, that many people died in acute disease, in acute poisoning, and after severe operations, because the temperature was not maintained. He had proved by experiment that, if two animals were subjected to severe injury, and one was kept in a moderately cool room, and the other in a hot room, the one would die, and the other recover. In this connection he would repeat a suggestion made to him by Dr. Dercum, which would afford one of the most efficient measures for maintaining temperature—to fill the ordinary water-bed with hot water, and allow the patient to lie on it.

Dr. **Carr**, of Washington, said that he had performed a quadruple amputation for frost-bite. The patient was brought into the hospital in a condition of collapse with the four extremities frozen. He reacted well, and remained in the hospital a week, when his constitutional condition became serious, and after consultation it was decided that amputation of the four extremities was desirable. The speaker operated, removing one foot above the ankle, the other foot through the metatarsal joint, one forearm about its middle, and one hand, leaving a small stump of the thumb, disarticulating it at the metacarpo-phalangeal articulation. The patient did very well. In operating he secured the vessels with hæmostatic forceps, and left the stump in that condition while he proceeded to amputate another limb.

Dr. J. **William White** said that he had understood from Dr. Ashhurst's paper that in his classification of triple amputations partial amputations were not included. He had last year, at the University Hospital, done a double knee-joint amputation, with amputation of a portion of one hand, leaving the thumb and one finger, and would have been glad to present the patient at the meeting. In reference to the technique, he had only one or two suggestions to make. If the irrigation was done with warm or hot water, it did not necessarily reduce the temperature, and, in fact, might aid in keeping up the bodily heat. The same was true with reference to the use of wet towels, which could be wrung out of hot water and frequently renewed. Bramann, assistant to von Bergmann, had recently detailed the results obtained at the latter's clinic by packing wounds with iodoform gauze. This prevented the formation of a blood-clot, which was, perhaps, next to a failure to secure asepsis, the most important cause of the failure to obtain primary union. Where there was danger of oozing, he packed the wound with iodoform gauze, which was allowed to remain from forty-eight to seventy-two hours. It was then removed and the sutures were applied; in the vast majority of cases union by first intention was secured. Even when the gauze was left *in situ* for from four to six days such union occurred after suturing. In a case of double or triple amputation time might be saved by packing the first operative wound with iodoform gauze as soon as the vessels were secured, and then dressing it. This could be done by an assistant, and the patient removed to the ward much sooner than if time were taken to introduce stitches. The suturing could be done at any time during the next two or three days.

The **President** would like to ask what some of the gynæcological operators would say. In their cases the abdomen was sometimes largely opened, and the intestines were exposed; if irrigation lowered the temperature in ordinary surgical cases, how much more should it do so in these! He thought it would be advisable to have a series of experiments and observations as to the effects of ether, chloroform, and perhaps other anæsthetics, upon the temperature, when used for long periods. As concerned the interesting case of triple amputation in the patient shown by Professor Ashhurst, he would like to say that no physiological statement had been made, so far as he knew, as to the effect of large losses of tissue upon the pulse, temperature, nutrition, blood-pressure, amount of urine, etc. A tempting subject here awaited some industrious observer.

Dr. **White** said that experiments were now being made at the University of Pennsylvania, upon animals and clinical subjects, to determine the effect of the administration of ether on the bodily temperature, and seemed clearly to indicate that a drop of from one to three degrees might be expected, not only in cases where no irrigation was used, but even where no operation of any sort had been performed. The note of a case had just been handed to him in which the temperature fell four degrees. The temperature before the operation was 99·5°, and after the operation (which was the removal of a tubercular testicle) it was 95·5°. No irrigation was employed. No general symptoms of shock, such as weakness or failure of the pulse, leakage of the skin, or shallowness of respiration, were observed in this case. A series of nine cases of all sorts of operations gave similar results, though the average reduction of temperature was not more than two or three degrees.

Dr. **William Goodell** said that in removing the ovaries one had to be very cautious on account of the collapse that might occur if the ovary was pinched or roughly handled. Something similar, he fancied, would occur in the removal of the testicle, and this, he thought, had had a good deal to do with the fall of the temperature noted.

Dr. **Ashhurst** said that the suggestion made by Dr. Hunt was an old one. Before the days of anæsthesia it was thought that the patient might suffer less pain by having both operations done at once; but, when the patient was insensible, there would certainly be less confusion by having only one done at a time. With reference to irrigation, as he had already mentioned, he had seen the temperature fall as low as 97° after a simple operation, and in operations not usually considered capital, such as the removal of the breast, the temperature had gone even lower, and the patient had remained in an extremely critical condition for hours. This had occurred where there had been no loss of blood, and no condition other than the irrigation to account for it. In cases where antiseptic measures had not been employed, he had not seen this depression, except when there had been great loss of blood or unnecessary exposure of the patient. In his list he had not included any but synchronous major operations. The cases reported to-night seemed to have been instances of minor amputation, as regarded some of the parts removed, and could, therefore, technically be looked upon as only double, not triple or quadruple amputations. With reference to irrigation, even if warm solutions were employed, they would tend to cool the body by evaporation, and the same was true with regard to wet towels; even if hot when applied, they would reduce the temperature unless covered with oiled silk to prevent evaporation. He did not think that the administration of ether alone had much effect upon the temperature, but under any circumstances we could better dispense with irrigation and wet towels than with anæsthetics. In regard to the case of excision of the testis which had been mentioned, it might be said that operations on the testicle necessarily required considerable exposure of the lower part of the abdomen. It was also a well-known fact that division of the spermatic cord was often followed by profound shock. This observation had been made by Mr. Erichsen, at the University College Hospital, London, and the speaker's own experience confirmed it. The moment that the cord was divided, the pulse failed decidedly, and there was more shock from removal of the testicle than from any other operation of equal gravity in the whole range of surgery. He had no objections to the antiseptic method of treatment, and he was in the habit of employing it, but he thought that we should not close our eyes to the fact that it might have some disadvantages. He thought that the maintenance of the patient's temperature was of more importance than the exclusion of a few microbes. All that could be accomplished by irrigation could be equally accomplished by washing the part before and after the operation, care being taken to keep the patient warm and dry. The ordinary antiseptic dressings had been employed in this case after the operations; he considered that their chief advantage was that they permitted infrequent dressing of the wound.

NEW YORK ACADEMY OF MEDICINE.

Meeting of February 2, 1888.

The President, Dr. A. Jacobi, in the Chair.

Xeroderma Pigmentosum and its relation to Malignant New Growths of the Skin.—Dr. R. W. Taylor read a paper with this title. Xeroderma pigmentosum had first been described in 1870, by Hebra and Kaposi. In 1877 he (Dr. Taylor) read a paper at the meeting of the American Dermatological Association, in which he reported seven cases of the disease. In 1878 he read a second paper, including additional observations. The present paper was based upon the continued observation of those seven patients, or of such of them as were still living, the entire period now being fifteen years since the first one had come under his observation; and it was intended to show the relation of such disease to the development of new growths. In it he had collected brief histories of all the cases yet published, thirty-nine in number. One other had been reported so imperfectly that it had had to be rejected. The title xeroderma was far from perfect, but because of its brevity it would probably be accepted in preference to others which had been proposed. The author then gave the histories of his seven cases from their beginning.

Three patients were sisters, all of dark complexion. Their parents were cousins, Hebrews, of dark complexion, but healthy. Seven other children were not so affected. Two other patients were cousins of these, brother and sister, both also having a dark complexion. Their parents were second cousins. The seventh case was also in a Hebrew child. In all the seven cases the clinical history of the disease was clearly portrayed. The various lesions presented admitted of sharp division for descriptive purposes. The disease consisted in teleangiectatic, pigmentous, and atrophic changes, all of which had most intimate pathological relations. Superadded to these polymorphous lesions were secondary new growths, which were at first benign and might remain so, but which might degenerate into malignant growths. In his seven cases the disease began, according to reliable testimony, in six at about the fifth or sixth month, and in one at the fourteenth month. In twenty-five of the recorded cases it was stated that the disease began between the third and twelfth months in ten, and between the first and second years in thirteen. There was reliable evidence that in several others it began very early. In great contrast with the age at which the disease developed in these cases was the age at which it developed in three cases reported by Kaposi, Heitzmann, and Videl—namely, sixteen, nine, and nine years respectively. While he was not in a position to say that these cases of late evolution were not xeroderma proper, yet he was very skeptical about them from the fact that they were very exceptional in their course. It should be borne distinctly in mind that the existence of epitheliomatous and other malignant growths on the face of persons subject to deep or light pigmentations did not necessarily constitute xeroderma pigmentosum. The weight of evidence, therefore, stamped this disease as one of very early childhood. Its invasion was almost constantly the same, beginning about the face and under the eyes as a well-marked smooth superficial erythema, which was often regarded by parents as the result of sunburn. In spite of this blemish there was no impairment of the health. The erythematous patches extended, gradually creeping over the face and neck, usually stopping at about the third rib by an abrupt margin. This condition on the face, neck, and trunk was of variable duration, from one to seven months, during which time the erythema might become less vivid. As the hyperæmia disappeared pigmentous spots developed, scattered over the surface. They were first of a light brown, and might become blackish or black. They varied in size from that of a pin-head to that of a lentil. Usually they were not much elevated. Scattered among them with great irregularity, and less numerous, were the teleangiectatic spots. They were smaller and rather more salient and had an irregular outline, and on close examination a congeries of capillaries could be made out. In most cases thorough pigmentation of the face and neck took place in about six months. It was less marked on the hands. With the evolution of these lesions there were no marked local subjective symptoms. The pigmented spots followed exactly upon the pre-existing red spots, and were, it seemed obvious, their sequelæ. The microscope demonstrated this intimate relationship. The two orders of lesions were erratic in their course; they had periods of exacerbation and remission, but their hold was never lost. If one disappeared it was soon replaced by another. Thus as the child grew older its disfigurement became greater. There was no record of a case in which a permanent amelioration had occurred. A very few escaped with disfiguring pigmentation or slight atrophy, but they too might be attacked later on by severer lesions. The teleangiectasis and pigmentation were peculiar to what might be called the stage of hypertrophy. In some cases atrophic changes were soon superadded; their course was subject to marked exacerbations and remissions. Although the disease occurred on both sides of the body, it was not symmetrical. In some cases it progressed and produced hideous deformities by reason of the size and situation of the patches; in others it was limited in extent. It reduced the skin to the thinness of parchment, and destroyed nearly all the follicles. Vessels could often be seen beneath. On the hands, arms, feet, and legs, atrophy was not so well marked as upon the face. The atrophy of the skin was proportionate to the growth or atrophy of the blood-vessels which formed the teleangiectatic spots. Atrophic changes were prone to occur upon the forehead, scalp, nose, eyes, ears, and mouth. Incomplete stenosis of the nasal and oral apertures was apt to occur. It was an interesting fact that when the atrophic process was at an end no further pigmentation took place. Epithelial new growths in their simplest and most rudimentary forms were to be found. These growths, at first simple and seemingly harmless, were often more terrible in their consequences than the hypertrophic or atrophic disfigurements, since their development produced the leaven upon which malignancy might subsequently be ingrafted. They were border-line lesions between benign and malignant new formations. Their surface might be termed fungating and oozing, at first of a deep-red or purple-blue color, soft and compressible, and reminding one of erectile tumors. They frequently fell off, leaving a surface which healed spontaneously or an ulcer which might prove intractable, leading eventually to a malignant process.

Of the thirty-nine reported cases, malignant growths had developed in sixteen, and non-malignant growths in six. In nine, in which no new growths had developed, the patients were yet too young to warrant a prognosis of future exemption. Out of the author's seven cases, epithelioma had developed in three. The statistics would seem to indicate that the period of greatest malignancy was under the tenth year, nearly as great until the twentieth year, and not great after the twentieth year.

No metastasis had been found.

The pathology of the disease had been well studied by Kaposi and others, whom the author quoted. With those facts before him, he thought Kaposi's explanation of the occurrence of epithelioma at so early an age was very satisfactory—namely, that it was due to rapid changes going on in the epithelial layers in the production and rapid disappearance of new papillæ, epithelium, and pigment.

Every conceivable external remedy had been tried without success. Measures should be directed to placing the skin at rest, and removing every possible source of irritation of the morbid parts. Special care should be given to the eyes, nose, and ears, as at these points the disease expended its malignancy. Tumors should be removed, and, if necessary, the tissues should be scraped to the bone.

The **President** said he had had the impression that in xeroderma pigmentosum there was from some cause a decided absence of connective tissue, and a good deal of cell formation, embryonic cells remaining; moreover, the best examples of the disease were found in children, and this pointed to its congenital origin. It was also a fact that in these cases malignant tumors developed at a very early age. He thought that in these things might be found a confirmation of the theory of Cohnheim, who believed that all pseudoplasms occurring in infancy, youth, and later life were the result of embryonic cells not undergoing their usual change into connective or other tissue, but remaining ready, under favorable conditions, to proliferate and form a malignant tumor. This want of change in the embryonic cells might account for the abnormal state of the blood-vessels in xeroderma, constituting a nævus which covered the face. The appearance and disappearance of the red spots, or nævi, might be accounted for by spontaneous thrombosis. If these views had any foundation in fact, one might find in them some suggestion for treatment. He thought surgery could do nothing to cure the patients. It might for the time improve the deformity, but that was all. Arsenic and phosphorus, in minute doses, had the power of causing nutritive irritation in tissues. The beneficial effect of phosphorus in chronic and subacute bone affections had been demonstrated by experiments upon animals, and by its administration in rhachitis and other osseous diseases. Might these remedies not have the power of causing nutritive irritation in the cellular tissue in xeroderma pigmentosum, and thus cure the disease?

Dr. **Taylor** thought that, inasmuch as other methods had failed, the president's suggestion as to curative treatment should be tried. Regarding the surgical treatment, which had been carried out in some of his cases, he and the operators, Dr. Gerster and Dr. Gruening, thought it had been fully justified by the results. It would have been undertaken earlier, at the time when the microscopical examination of the tissue showed angeio-myxoma, but for fear of hæmorrhage.

Book Notices.

A Manual of Practical Hygiene. By Edmund A. Parkes, M. D., F. R. S., etc. Edited by F. S. B. François de Chaumont, M. D., F. R. S., etc. Seventh Edition. Philadelphia: P. Blakiston, Son, & Co., 1887. Pp. xx–766.

It can rarely be said of any treatise upon a special branch of scientific research that it is *par excellence* the best of its class; yet such high meed of praise is not misplaced in relation to a work which in its original issue speedily assumed a foremost position, and which in successive editions has been kept abreast of the advance of technical knowledge by the author's accomplished successor in the British Army Medical School.

Apart from a rearrangement of the sequence of some of the chapters, for better convenience of reading and reference, the editor's touch has been so judicious that, although many alterations and additions are noticeable, the size of the volume is not rendered unwieldy, the increment of sixteen years of revisal being less than 100 pages. The important subjects of the effects of impure water and the various methods of purification and filtration, disposal of excreta, ventilation, and food are brought fully up to date, as are also the processes of chemical and microscopic examination. But, while attaching provisional weight to microbiological investigations (including even the recommendation of "plate-culture"), it is evident that Dr. de Chaumont holds a conservative, if not skeptical, attitude as regards the dogmata of the bacteriologists, some of the most positive of which he considers as, to say the least, not proved. For this reason it is possible that the section on disinfection will fail to satisfy those readers whose views have been fixed by laboratory experiments or bounded by immersion lenses. There is an apparent inconsistency in separating by more than a hundred pages the author's suggestions for the examination of house pipes and drains and Mr. Eassie's instructions for the sanitary inspection of a house, and in neither section is there any mention of the test by peppermint, ether, paraffin smoke, or other methods familiar to American inspectors. Book II, comprising 180 pages, is devoted, as in the earlier editions, to military hygiene; and the directions for chemical and microscopical analyses, formerly scattered through the text, are relegated to a separate Third Book, a great part of which has been rewritten.

Whether for civil or military sanitary administration, we know of no work in any language which so concisely yet completely fulfills its purpose; and, while bearing in mind the classical caution against "the man of one book," still, to him who has but the time or inclination to gain authentic hygienic information from a single tome this may be conscientiously commended as the one book to be chosen.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Hæmorrhoids by Injections of Carbolic Acid and Other Substances. By Silas T. Yount, M. D., Physician to St. Elizabeth's Hospital, etc. Second Edition. Lafayette, Ind.: The Echo Music Co., 1888. Pp. xiii–17 to 102.

La phthisie pulmonaire. Par H. Hérard, Président de l'Académie de médecine, V. Cornil, Professeur d'anatomie pathologique à la Faculté de médecine de Paris, et V. Hanot, Professeur agrégé à la Faculté de médecine de Paris. Deuxième édition, revue et augmentée. Avec 65 figures en noir et en couleurs intercalées dans le texte, et 2 planches en chromolithographie. Paris: Félix Alcan, 1888. Pp. iii–841.

Die Rolle der Suggestion bei gewissen Erscheinungen der Hysterie und des Hypnotismus. Kritisches und experimentelles. Von Dr. Armand Hückel, früher 1. Assistenzarzt an der medicinischen Klinik zu Tübingen. Jena: Gustav Fischer, 1888. Pp. 72.

Dermepenthesis: Animal Skin-Grafting. By C. F. Cadogan-Masterman, M. D., Medical Officer of Health, Stourport, etc.

Di un nuovo sfigmomanometro. Pel Dott. Antonio Boccolari, Primo assistente, clinica medica della R. Università di Modena, diretta dal prof. E. Galvagni.

Questions and Answers on the Essentials of Physiology. Prepared especially for Students of Medicine. By H. A. Hare, B. Sc., M. D. (Univ. of Pa.), Demonstrator of Therapeutics and Instructor in Physical Diagnosis in the Medical Department of the University of Pennsylvania, etc. With Illustrations. Philadelphia: W. B. Saunders, 1888. Pp. viii–17 to 170.

Second Annual Report of the Allegheny General Hospital, Allegheny City, Pa. Charter, Rules, and Regulations, January, 1888.

Essays on Hysteria, Brain Tumor, and other Cases of Nervous Disease. By Mary Putnam Jacobi, M. D., etc. New York and London: G. P. Putnam's Sons, 1888. Pp. 216. [Price, $2.]

Essentials of Chemistry and Toxicology for the Use of Students in Medicine. By R. A. Witthaus, A. M., M. D., Professor of Chemistry and Physics in the University of New York, etc. Second Edition. New York: William Wood & Co., 1888. Pp. vi–294. [Wood's Pocket Manuals.]

The Surgical Diseases of the Genito-urinary Organs, including Syphilis. By E. L. Keyes, A. M., M. D., Professor of Genito-urinary Surgery, Syphilology, and Dermatology in Bellevue Hospital Medical College, etc. A Revision of Van Buren and Keyes's Text-book upon the same subjects. New York: D. Appleton & Co., 1888. Pp. xv–704. [Price, $5.]

Transactions of the Academy of Medicine in Ireland Vol. V. Edited by William Thomson, M. A., F. R. C. S., General Secretary, etc. Dublin: Fannin & Co., 1887. Pp. xxxv–367.

Atlas of Venereal and Skin Diseases: Comprising Original Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York; and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculi i, ii, and iii. New York: William Wood & Co., 1888.

Report of Ten Consecutive Cases of Abdominal Section. By Dr. R. B. Maury, Memphis, Tenn. [Reprinted from the "Memphis Medical Monthly."]

Miscellany.

Fairchild's Pepsin.—Dr. William Murrell, of London, the well-known therapeutist, is reported to have said, in a recent lecture given at the Westminster Hospital, that pepsin was of great value in the treatment of dyspepsia, if certain points were attended to in prescribing it. It would not do to simply write down "pepsin." Pepsin by itself, unqualified, had no meaning, and it was essential to indicate distinctly what brand of pepsin was required. During the last two years he had carefully tested all the pepsins of which he had been able to obtain specimens. The results had been simply startling. Of two different kinds of pepsin, equally popular and equally well known, one had been found to be five or six times as active as the other. The best pepsin was Fairchild's. Bullock's came next, and then Squire's. The French and German pepsins were a long way down in the list, and could not be compared for one moment with either the English or the American. Of late years a great deal had been written about *Carica papaya* as a digestive agent; but, as a matter of fact, papaw-juice could not compare in activity with the best pepsin. The best papain examined had about half the activity of the best pepsin, as shown by experiments made both in acid and in alkaline solutions. The plan of predigesting milk and other articles of food with pancreatic extract answered admirably, and should always be resorted to in intractable cases.

Gelatin Casts of Anatomical Specimens.—The "Scientific American" says that some time ago Mr. C. W. Cathcart, M. B., of the Edinburgh Infirmary, proposed a new basis for making casts of anatomical specimens. The basis is made as follows: Take of "No. 1" gelatin, say 6 oz., soak it till quite soft and swelled, afterward dry it slowly until just pliable. As it has now the minimum of water necessary, melt it in a water bath, and add 6 oz. (measure) of clear glycerin. When the two are thoroughly mixed, the material is ready. To render it opaque, add while it is still hot, and therefore fluid, small quantities of a thick paint made by rubbing up oxide of zinc in glycerin. When a skin color is wanted, a little vermilion is required to give a warm, life-like hue. Should other things be cast, the prevailing color can be given with water color as required (tubes of moist water color sold at *2d.* each will be found convenient). Several pounds of this mixture may be made at once, and portions used as required.

The Western Pennsylvania Medical College, of Pittsburgh, held its second annual commencement exercises in the Grand Opera House on the 24th of March. Diplomas were awarded to thirty-four candidates, showing an increase of fifty per cent. over the graduating class of the previous year. In the evening the faculty, the alumni, and a number of guests dined at the Seventh Avenue Hotel. We are glad to note the successful progress of this new institution.

"Scotch Oats Essence."—In the April number of the "Druggist's Circular and Chemical Gazette," for advance sheets of which we are indebted to the manager of that excellent journal, Dr. R. G. Eccles, of Brooklyn, gives an account of his analysis of a nostrum known as "Scotch Oats Essence." He declares that the preparation is about one third alcohol, and that each ounce of it contains nearly half a grain of morphine, notwithstanding the fact that it is "pledged to destroy the morphine craving and 'free the victim from his terrible bondage.'"

Commenting on the matter, our contemporary says editorially:

"For many years oats have enjoyed an excellent reputation as an article of food. There has been a run, so to speak, on the oat idea, and the bowl of porridge is systematically eaten, not so much perhaps from strictly hygienic reasoning as to its diet value as from a notion that it is a sort of special tonic or reconstructive. From this pleasant idea of a food that serves as a medicine in ordinary cases, the transition is easy to a belief in the efficacy of a medicine derived from food when the case becomes extraordinary. If the oat-grains are good in ordinary cases to prevent disease, why should not their 'essence' be potent as a restorer when disease has already made a beginning? It is not difficult to develop so taking an idea, and an essence or extract of oats has been more or less talked of as a therapeutic novelty by a certain school of practitioners. With the value of such a preparation, or the want of it, we have nothing to do at present. Our concern is with another utilization of the oat idea. For some time past public attention has been called by persistent advertising to a nostrum named 'Scotch Oats Essence.' Its extravagant claims have at last secured for it scientific attention with a result that is most alarming. From the report of an analysis of this essence by Dr. Eccles, which appears in another part of the 'Circular,' it will be seen that the inventor is possessed of more than common ingenuity, but ingenuity, unfortunately, of a most diabolical character. Under the guise of a preparation which from its name might be expected to be nothing worse than a harmless humbug, he is furnishing an insidious poison. With a refinement of cruelty he lays a trap for the unwary, and under the bait of oats places the bane of opium. The dissemination of such a vile concoction is a manifest menace to the public health, and naturally the question at once arises, Have we no law which will prevent such attacks on the people? Whether our present sanitary regulations are sufficient for the purpose is for the authorities to determine. If they are not, the sooner we have stricter ones the better. Meanwhile, the only immediate protection the public can have is from the pharmacist. He ought to be able to easily confirm the analysis of Dr. Eccles, which, we might add, has already been verified by another prominent chemist, and, knowing the character of the 'Scotch Oats Essence,' it will be his duty to inform any intending purchaser of its real and dangerous nature."

The Lomb Prizes for 1888.—The secretary of the American Public Health Association, Dr. Irving A. Watson, of Concord, N. H., gives notice that Mr. Henry Lomb, of Rochester, N. Y., offers, through the association, two prizes for the current year for essays on the subject of "Practical Sanitary and Economic Cooking adapted to Persons of Moderate and Small Means." The first prize is $500, the second, $200. The judges are Dr. Charles A. Lindsley, of New Haven, Conn.; Dr. George H. Rohé, of Baltimore; Dr. Victor C. Vaughan, of Ann Arbor, Mich.; Mrs. B. H. Richards, of Boston; and Miss Emma C. G. Polson, of New Haven. The arrangement of the essays will be left to the discretion of the author. They are, however, expected to cover, in the broadest and most specific manner, methods of cooking, as well as carefully prepared receipts, for three classes: (1) Those of moderate means; (2) those of small means; (3) those who may be called poor. For each of these classes, receipts for three meals a day for several days in succession should be given, each meal to meet the requirements of the body, and to vary as much as possible from day to day. Formulas for at least twelve dinners, to be carried to the place of work and mostly eaten cold, are to be given. Healthfulness, practical arrangement, low cost, and palatableness should be considered. The object is the information of the housewife, to whose requirements the average cookbook is ill adapted, as well as to bring to her attention healthful and economic methods and receipts. All essays written for these prizes must be in the hands of Dr. Watson on or before September 15, 1888. Each essay must bear a motto, and have accompanying it a securely sealed envelope containing the author's name and address, with the same motto upon the outside of the envelope. After the prize essays have been determined upon, the envelopes bearing the mottoes corresponding to the prize essays will be opened, and the awards made to the persons whose names are found within them. The remaining envelopes, unless the corresponding essays are reclaimed by authors or their representatives within thirty days after the announcement of the awards, will be destroyed, unopened, by the secretary. None of the judges will be allowed to compete for a prize. The judges will announce the awards at the annual meeting of the association in 1888. It is intended that the essays shall be essentially American in their character and application, and this will be considered by the judges as a special merit. Competition is open to authors of any nationality, but all the papers must be in the English language.

The Medical Association of the State of Alabama will hold its annual meeting in Montgomery on Tuesday, Wednesday, Thursday, and Friday, the 10th, 11th, 12th, and 13th inst., under the presidency of Dr. Edward H. Sholl, of Birmingham. The programme includes an address of welcome in the name of the Medical and Surgical Society of Montgomery County, by Dr. W. G. Bibb; the president's annual message; the annual reports of the senior and junior vice-presidents, Dr. Thaddeus L. Robertson, of Birmingham, and Dr. John Paul Jones, of Camden; the annual oration, by Dr. B. J. Baldwin, of Montgomery (to be followed by an entertainment consisting of recitations, readings, and music); "The Value of Exploratory Incisions," by Dr. William Locke Chew, of Birmingham; "The Radical Cure of Hernia," by Dr. Luther Leonidas Hill, of Montgomery; "Practical Investigation as to the Therapeutic Value of Salicylate of Hydrargyrum," by Henry Tutwiler Inge, of Mobile; "Studies in Eczema," by Dr. Arnold Jolly, of Linden; "Electricity in Uterine Diseases," by Dr. Mortimer Harvey Jordan, of Birmingham; "Physiological and Pathological Heredity," by Dr. James Thomas Searcy, of Tuscaloosa; "Diarrhœal Diseases of Children in Western and Middle Alabama," by Dr. William Henry Sledge, of Livingston; "The Medical Topography of Walker County and its Prevailing Diseases," by Dr. Alexander McAdams Stovall, of Jasper; "Color-blindness and Defective Vision in relation to the Traveling Public and the Railroads," by Dr. Robert Dickens Webb, of Birmingham; "Studies in Rectal Surgery," by Dr. Benjamin Leon Wyman, of Birmingham; a discussion of the best methods of administering the health laws and the law to regulate the practice of medicine; and an omnibus discussion (on "Typho-malarial Fever"; "Hereditary Diseases"; "Influenza"; "Pain as a Symptom of Disease"; "The Knife in Uterine Surgery—its Uses and Abuses"; "The Medical Treatment of Old Age"; and "Rheumatism and Gout"), to be led by Dr. Milton Columbus Baldridge, of Huntsville. From this programme and from the announcements of business matters and social entertainments it may be inferred that the meeting will be both profitable and enjoyable.

Professor Kussmaul.—The New York "Evening Post" speaks of a public banquet lately given by the medical faculty of the University of Strassburg in honor of Geheimrath Professor Kussmaul. "Dr. Goltz, as dean of the faculty, whose gifts as an after-dinner speaker are famous through Germany," says the "Post," "outshone himself in doing justice to the toast of the evening, emphasizing each witty allusion and humorous sally with a gigantic percussion hammer and pleximeter which, in honor of the guest, he had substituted for the usual mallet of the toast-master. He concluded by predicting that Kussmaul, though abdicating the professor's chair, would yet speak with authority in the medical councils of Europe, and that humanity would owe him an ever-increasing debt so long as his opinion and practice could be appealed to. Dr. Freund, professor of gynæcology, was the next speaker, and, after referring in humorous strain to the accident that had made Kussmaul a physician—to wit, an accident to his foot which induced temporary lameness, and with it an interval of sage reflection—he evoked peals of laughter from his audience by hinting that, their names being identical in meaning, the Oribasius of the fourth century was no other than the Kussmaul of the nineteenth, but that the clinical teacher of Strassburg had greatly improved on his *alter ego*, the body-physician to the Emperor Julian, the Apostate. This was a highly effective sally, 'Oribasius' being an exact equivalent in Latin for the German 'Kussmaul' (literally *kiss-mouth*)."

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 30th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 10th corresponded to an annual rate of 23·3 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Halifax, viz., 15, and the highest in Manchester, viz., 31·3 in a thousand. Small-pox caused 29 deaths in Sheffield, 3 in Oldham, 2 in Manchester, and 2 in Blackburn.

London.—One thousand eight hundred and eighty-six deaths were registered during the week, including 2 from small-pox; measles, 21; scarlet fever, 29; diphtheria, 24; whooping-cough, 101; enteric fever, 20; diarrhœa and dysentery, 17. Diseases of the respiratory organs caused 490 deaths; different forms of violence, 51; and 6 suicides were registered. The deaths from all causes corresponded to an annual rate of 23 in a thousand. In greater London 2,385 deaths were registered, corresponding to an annual rate of 22·5 in a thousand of the population. In the "outer ring" 38 deaths from whooping-cough were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending March 10th in the sixteen principal town districts of Ireland was 32·3 in a thousand of the population. The lowest rate was recorded in Drogheda, viz., 0, and the highest in Wexford, viz., 47 in a thousand. In Dublin 224 deaths were registered, including 2 from diphtheria; measles, 4; whooping-cough, 7; scarlet fever, 5; typhus, 1; and enteric fever, 1.

Marseilles.—One thousand and thirty deaths were registered during the month of February, 1888, including small-pox, 12; enteric fever, 21; scarlet fever, 2; diphtheria and croup, 46; and measles, 18.

Denmark.—The quarantine order issued by the Danish Government, under date of February 24, 1888, includes the following: Quarantine measures are to be enforced with regard to ports on the Swedish coast between Malmö and Landskrona; all ports of Chili, Florida, Jamaica, Martinique, Guadeloupe, Cuba, East Indies, Tonkin, and Cochin China; Trieste; all ports of Egypt; Red Sea ports; Rio Janeiro; and Havana. The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes—providing the articles named do not constitute the personal effects of travelers—rags, waste cotton and wool, refuse paper, hair, and hides, remains in force. In addition thereto, special attention is to be paid to the cleansing, under official inspection, of linen, clothing, and bed-clothing brought from Rio Janeiro and Havana as the effects of travelers.

Martinique.—The United States consul, in his dispatch under date of March 3, 1888, states that "small-pox in an epidemic form has been spreading here, and while it is difficult to arrive at the exact number of cases, there are presumed to be in this island nearly three thousand persons affected, there being forty deaths or more during the last week. Fortunately the disease seems to be a mild form, and it is here hoped that it will speedily run its course, many persons having been vaccinated."

Santiago, Chili.—The United States *charge d'affaires ad interim*, in his dispatch dated January 31, 1888, with reference to cholera, states that "the disease has not increased, but rather gradually diminished here. The average number of deaths from it daily, which at the latter date was about 20, has declined to from 10 to 12. This in a population of 200,000 inhabitants is not alarming. About the middle of December the disease appeared in Valparaiso, spreading with unusual rapidity, causing the number of deaths to exceed 30 a day in a population a little more than half that of the capital. Happily the disease has diminished there too, so that the number of deaths of cholera as published in the bulletins average from 8 to 12 daily at present. There is more or less cholera through the provinces, especially to the south, and the number of deaths from it may approximately be estimated from 30 to 40 daily. Wherever it appears it is promptly met by medical aid. There is no unusual excitement or fear manifested by the public, and business and amusements are going on as usual. Many of the well-to-do people have gone to their estates or to the sea-side to escape the hot days at the capital. Congress will adjourn in a few day, and the president, with most of the cabinet and other officials, will remove to Valparaiso and Viña del Mar, to remain until about the 1st of April."

Havana.—Three deaths from yellow fever and 21 from small-pox are reported for the week ending March 17, 1888.

Mortality Table, Foreign Cities.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	Deaths from— Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	March 10.	2.260,945	1,253	..	....	11	....	14	3	34
Glasgow	March 10.	545,678	297	..	....	....	....	7	3	5
Warsaw	March 3.	439,174	202	..	....	8	....	....	....	5
Calcutta	February 11.	433,219	235	31	....	....	....	....	....	1
Amsterdam	March 3.	389,916	198	..	....	....	...	1	....	1
Amsterdam	March 10.	389,916	213	..	..	....	1	....	....	8
Rome	February 4.	382,973	279	..	....	2	....	....	....	2
Munich	February 25.	275,000	144	..	....	....	...	1	1	1
Palermo	March 12.	250,000	127	..	....	....	1	3	2	1
Belfast	March 10.	227,022	148	..	....	....	....	2	2	....
Genoa	March 10.	179,329	132	..	....	6	....	....	....	3
Leipsic	March 10.	170,000	92	..	...	....	...	....	1	9
Trieste	March 3.	154,500	119	..	....	7	....	....	1	3
Toronto	March 17.	130,000	24	..	....	....	....	....	1	4
Stuttgart	March 10.	125,510	43	..	....	....	....	....	....	1
Bremen	March 3.	122,000	58	..	....	....	....	1	....	1
Barmen	March 10.	109,000	47	..	....	....	....	....	....	1
Merida	March 13.	48,711	44	..	....	....	....	3	....	....
Guayaquil	February 19.	30,000	89	..	6	10	....	31	....	....
Guayaquil	February 26.	30,000	74	..	3	13	....	29	....	....
Gibraltar	March 4.	23,631	18	..	....	....	....	....	....	1
Sagua la Grande.	March 10.	15,605	10	..	....	7	....	....	....	....

United States.

The following report by the Senate Committee on Epidemic Diseases, in relation to seaboard quarantines, is republished for the information of quarantine authorities:

Mr. Harris, from the Committee on Epidemic Diseases, submitted the following

REPORT:

[To accompany bill S. 2493.]

The Committee on Epidemic Diseases has had under consideration several bills, resolutions, and memorials, as follows:

- Senate bill 665, "To establish a quarantine station at the port of San Francisco";
- Senate bill, 1641, "To establish a permanent quarantine station at or near Cape Charles, Virginia";
- Resolutions of the Legislature of the State of Virginia in the nature of a memorial, asking the establishment of a quarantine station at Cape Charles;
- Resolutions of the Board of Trade of Chester, Pa.;
- Petition of the Board of Health of Rockford, Ill.;
- Resolutions of the Board of Health of Charleston, S. C.;
- Petition of the Medical Society of San Diego, Cal.; and
- Resolutions of the American Public Health Association;

all urging the establishment of national quarantine at the points of danger upon the Gulf and sea-coast.

The committee reports an original bill, providing for the establishment of seven quarantine stations upon the coast, in addition to the one already provided for at the mouth of the Mississippi River by special act of the present session. The two bills above referred to are therefore reported back with the recommendation that they be indefinitely postponed.

The Public Health Association of America, at its annual meeting in November, 1887, by resolutions, earnestly urge the establishment, thorough equipment, and maintenance of a system of coast quarantine.

Many other sanitary organizations have earnestly urged the same policy, and, so far as the committee is advised, every sanitary organization in the country appreciates its importance and earnestly recommends its adoption.

These bills, resolutions, and memorials were referred by the committee to the Surgeon-General of the Marine-Hospital Service, for such suggestions as in his opinion the subject merits, and the following communication was addressed to the committee by that officer:

The time has come when the judgment of sanitarians has passed beyond the realm of speculation in the matter of quarantine. That word no longer means the detention on board of a vessel for a period of "forty days" of the ill-fated passengers and crew of a suspected vessel. It means the speedy removal of the sick to a comfortable hospital, the disinfection and cleansing of the vessel, and her restoration to the commercial fleet at the earliest possible date, the lightering and removal of the cargo and the cleansing of the bilge. Clean ships are not *per se* carriers of infection, foul ones are; and the time will doubtless come when enlightened sanitary legislation will enact a penalty for maintaining a foul vessel as a pestilence breeder, and when the time shall come when we shall have only clean ships sailing from clean ports, then our quarantine stations may be made inspection stations only, but for many years it will be necessary to rigidly enforce quarantine measures as now practiced and outlined above.

Those most interested being agreed that the maintenance of the seaboard quarantines is of the first necessity, it therefore follows that those establishments should be well built and kept supplied with the latest and most improved sanitary appliances for the work. To that end the accompanying bill has been framed, and attached to this report are detailed reasons for the establishment of each quarantine named in the bill, together with an estimate of the cost of the same. Included in the estimate is the amount considered necessary for the maintenance of the stations for the first year. Moreover, the season is now rapidly approaching when epidemic diseases will again increase, and what is done to be of avail this year should be done quickly.

Estimated Cost and Annual Expense of National Quarantine Stations on the Atlantic, Gulf, and Pacific Coasts, recommended to be established and properly equipped.

The stations starred are in temporary use by the Government, but are not properly equipped, the expenses thereof being borne out of the contingent fund at the disposal of the President for the prevention of the spread of epidemic diseases and the maintenance of quarantine at points of danger.

* DELAWARE BREAKWATER.

(Site owned by the Government.)

Disinfecting machinery	$20,000
Steam-tug	30,000
Warehouse and additional buildings	10,000
Annual expenses	10,000
Total	$70,000

There is at present at this station a small hospital and boat-house, which will answer for the present. This quarantine station is necessary for the quarantine service of the populous States bordering on the Delaware River.

Pennsylvania, Delaware, and New Jersey are each interested in its maintenance. The Lazaretto, just below Philadelphia, is not located at a safe distance from the shore, nor is it possible in the Delaware River to find a site for a quarantine station free from objection. The Philadelphia Board of Health and the State boards of health of Pennsylvania and New Jersey and the Delaware health authorities have recommended and urged the proper equipment of this station. There is an iron pier inside the breakwater owned by the Government that could be utilized when required. A steam-tug is necessary, not only for boarding purposes, but for the removal of the sick and for the maintenance of a patrol to prevent communication between vessels in quarantine and vessels at anchor. This breakwater is a port of call, where vessels from foreign ports lie to await orders to destination.

The "disinfecting machine" estimated for this and other quarantines is a machine on a tug-boat as is now used by the Louisiana Board of Health. It is believed by most sanitary authorities to be the best in the world. Its use admits of the most speedy disinfection and restoration of the vessel to the commercial fleet. Drying chambers for ships' bedding, sailors' luggage, etc., can be provided for when the warehouses are built.

* CAPE CHARLES, VIRGINIA.

Purchase of site	$5,000
Construction of wharf	3,000
Hospital buildings and officers' quarters	37,000
Floating disinfecting machinery	25,000
Steam-tug	30,000
Annual expenses	12,000
Total	$112,000

This station is necessary for the quarantine service of the District of Columbia, Virginia, and Maryland. In the latter State there is a small, poorly equipped station at Hawkins's Point, on the Patapsco, seven miles below Baltimore, but no protection is afforded the eastern shore of Maryland, nor the point between the bay and the Potomac. All points on the Potomac, Rappahannock, and James rivers are now without quarantine facilities other than the present temporary station at the Capes. Fisherman's Island, which has been offered to the Government for $5,000, has been chosen as the best site for the quarantine. The character of the shifting sands and difficult foundation makes it necessary to ask for more money for buildings than at some other places. Like the Breakwater, Hampton Roads is also a place of call.

* SAPELO, SOUTH ATLANTIC STATION.

(Site owned by the Government.)

Disinfecting machinery	$20,000
Warehouse and wharf	10,000
Small boats	500
Annual expenses	8,000
Total	$38,500

This station is intended as a refuge station for the South Carolina, Georgia, and Florida coasts. The business of first boarding is done by the local health inspectors at Charleston, Savannah, Brunswick, Fernandina, and other ports interested, and when a vessel is to be quarantined she is ordered to Sapelo Station for that purpose. No steam-tug is deemed necessary at this station. The island (Blackbeard) on which the quarantine is located is owned by the Government. The estimated annual expenses are less than either the Breakwater or Cape Charles Station, because the business will be less and no steamboat will be required. The boards of health on the South Atlantic now use this station as above indicated, although imperfectly equipped, and all attempts to suspend it have been met by repeated protests.

*GULF QUARANTINE (FORMERLY SHIP ISLAND).

Appropriation for hospital and appliances already made, and site provided for by special act	$45,000
Annual running expenses to be appropriated	15,000
Total	$60,000

This station is the refuge station for the entire Gulf coast west of Pensacola. A board has been detailed to select the site under the recent act of Congress directing the removal of the station, and the general expenses are provided for under that act. Government land will doubtless be chosen for the site.

NEAR KEY WEST, FLORIDA.

Disinfecting machinery	$20,000
Purchase of site (contingent)	5,000
Warehouse and wharf	10,000
Small boats	500
Annual expenses	10,000
Steam-tug	30,000
Hospital buildings and officers' quarters	12,500
Total	$88,000

This station is required on account of the rapidly growing commerce with Cuba, the West Indies, and the Central American ports, nearly all of which are more or less constantly afflicted with yellow fever. The recent disastrous epidemic of yellow fever at Tampa and Key West is an evidence of what may be expected if prompt measures are not at once taken to establish a quarantine station at this point. The Mississippi Delta Station is too far away to properly serve the west coast of Florida, and when it is remembered that at present a person in the incubative stage of yellow fever may pass from Havana to any of the interior cities, the necessity for a careful inspection at this outpost during the dangerous season is apparent. The estimate for the site is made contingent, because inquiry may show that there are already sites owned by the Government. A steam-tug is necessary here for boarding purposes, and to carry supplies to the key that may be selected for the station.

SAN DIEGO, CAL.

Purchase of site	$5,000
Disinfecting machinery	20,000
Warehouse and wharf	10,000
Small boats	500
Annual expenses	10,000
Hospital buildings and officers' quarters	10,000
Total	$55,500

This station is necessary on account of the steadily increasing commerce with the Mexican, South American, and Central American coasts. Great alarm has been felt recently on account of the severe and widespread epidemic of cholera now existing in Chili, which disease has shown its usually high mortality. During the yellow-fever epidemic, which prevailed recently on the Mexican coast, this port was repeatedly threatened, and the danger is likely to increase rather than diminish. The harbor, the only natural one belonging to the United States south of San Francisco, is the first American port of refuge for American vessels in South Pacific waters, and on this account receives a proportionately large shipping, and since the establishment of interior railway connections the shipping at this port has largely increased.

SAN FRANCISCO, CAL.

(Site owned by the Government.)

Disinfecting machinery	$20,000
Warehouse and wharf	10,000
Steam-tug	30,000
Small boats	1,000
Hospital buildings and officers' quarters	24,000
Annual expenses	18,000
Total	$103,000

The necessity of this station has long been recognized, and has been frequently recommended by the Department, and a special report on this station has recently been made to the committee. A site was selected by a board consisting of one medical officer each from the Army, Navy, and Marine-Hospital Service. The board considered a certain portion of Angel Island, now owned by the Government, to be the most suitable place for its establishment. Owing to the great amount of work required to be done, the annual expenses will be greater than at most of the other quarantines. There is no local quarantine, and a vessel must lie in the harbor with the sick on board. The local authorities are unanimous in urging the establishment of this station.

PORT TOWNSEND, WASHINGTON TERRITORY.

Purchase of site	$5,000
Disinfecting machinery	20,000
Warehouse and wharf	10,000
Small boats	500
Annual expenses	10,000
Hospital buildings and officers' quarters	10,000
Total	$55,500

This station is necessary on account of its great distance from San Francisco, and the fact of its being the entrepôt to the populous Puget Sound country and the already great and increasing commerce. With the development of Alaska, and the increasing business of the North Pacific Railway, the necessity for the establishment of this station will increase each year.

From this statement it appears that Dr. Hamilton recommends the erection and thorough equipment of seven quarantine stations in addition to the one already provided for at the mouth of the Mississippi River, as follows:

Delaware Breakwater; Cape Charles, Va.; Sapelo Sound; Key West, Fla.; San Diego, Cal.; San Francisco, Cal.; and Port Townsend, Oregon.

The estimated aggregate cost of construction and equipment of these quarantine stations, including the one at the mouth of the Mississippi River, is $489,500, and the estimated aggregate annual cost of maintaining them is $93,000.

Believing, as the committee does, that it is the duty of Congress to so regulate commerce as to prevent the introduction of contagion from foreign countries into the United States, the accompanying bill is reported, with the recommendation that it pass.

Nantucket.—A dispatch in the New York "Herald," of March 30th, reports the occurrence of a suspected sporadic case of cholera at the Island of Nantucket, from the wrecked British steamer Canonbury.

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, on Monday evening, the 9th inst., Dr. J. J. Garmany will read a paper on "Dislocations of the Astragalus, etc."; and Dr. Willy Meyer will read on "Cystoscopy and the New Cystoscope of Leiter and Nietze, with a Demonstration of the same."

At the next meeting of the Section in Neurology, on Friday evening, the 13th inst., Dr. M. Allen Starr will report cases of partial ophthalmoplegia externa, acute myelitis, and cerebellar tumor; and Dr. D. B. St. John Roosa will read a paper on "The Differential Diagnosis of Peripheric and Central Aural Disease."

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 16th inst., Dr. Gorham Bacon will read a paper entitled "A Case of Carcinoma of the Ear having its Origin probably in the Tympanum or Mastoid Cells"; and Dr. Frank W. Ring, one entitled "Four Cases of Acute Inflammation of the Middle Ear from the Abuse of Roosa's Bulb Nasal Inhaler" and one on "The Disastrous Results of a New Artificial Drum Membrane."

ANSWERS TO CORRESPONDENTS.

No. 169.—Your opponent is right.

No. 170.—It is all but impossible for a person injured in the way you describe to recover. Balls do sometimes remain in bony tissue in a condition which might be called encysted, but such an occurrence it is beyond the power of surgery to bring about. In the case you describe, the ball could not have been removed without laparotomy, and perhaps not with it; and in such a case the difficulties in carrying out efficient antiseptic treatment would be almost insuperable.

No. 171.—1. The character of the growth seems to us very doubtful, but we should fear that it was a sarcoma. We think exploratory laparotomy might be proper if it should begin to increase again, but that point could hardly be determined otherwise than by examination of the patient. 2. Ichthyol may be had of almost any of the principal New York druggists, and probably of those in other places. At present the wholesale price here is $4.50 a pound.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

THE CARTWRIGHT LECTURES
ON
THE GENERAL PATHOLOGY OF FEVER.

DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

By WILLIAM H. WELCH, M. D., Baltimore,
PROFESSOR OF PATHOLOGY IN THE JOHNS HOPKINS UNIVERSITY.

Lecture II.

THE EFFECTS OF INCREASED TEMPERATURE OF THE BODY.

Thursday, April 5, 1888.

In the last lecture I endeavored to bring before you the main facts which we possess bearing upon the explanation of febrile rise of temperature. After a review of our knowledge concerning heat-production, heat-dissipation, and heat-regulation in fever, we were led to the conclusion that neither the changes hitherto observed in the production of heat nor those in the loss of heat sufficed to explain febrile temperatures. Such an explanation seemed possible only upon the assumption that the fever-producing agents act either directly or indirectly upon the nervous mechanism controlling the relations to each other of the production and the discharge of heat. We then turned our attention to the relations of the nervous system to these processes, and found that the investigations of recent years had enabled us to obtain a much clearer conception than was formerly possible of the manner in which the complicated heat relations in fever may be brought about by an action upon the nervous system. We found even substantial experimental basis in support of clinical facts which show that circumscribed lesions of certain parts of the central nervous system may induce directly febrile disturbances of animal heat.

To carry the subject further, to consider whether pyrogenic agents act primarily or only secondarily upon the processes concerned in heat-production, or upon those concerned in heat-dissipation, or upon the apparatus regulating the relations to each other of these two sets of processes; to discuss whether these agents act directly upon the central nervous system, and, if so, upon what part, or upon the peripheral nerves or their terminations, or upon the tissues; to follow out more fully than we have done hitherto the themes here suggested—would lead us with our present knowledge into a sea of speculation. We should find only here and there a faint light of fact to guide us. Even upon foundations as insecure as this, speculations have their legitimate uses. A good hypothesis is a most valuable incentive to scientific work. It is not my purpose, however, to carry you with me further in this direction, although I realize that a single lecture has been far from sufficient for a satisfactory exposition of the subject.

After dismissing the considerations bearing upon the so-called theory of fever, there still remain a host of questions properly belonging to our subject. It is evidently impossible, even if it were desirable, that these lectures should include a discussion of all these questions. I have therefore selected certain ones, partly because they seem to me of immediate interest, and partly because I have given some attention to their study.

In the present lecture I wish to present to you some observations concerning the relation of elevation of temperature to other disorders of fever, and as to the question how far increased temperature is a source of danger in fevers.

Here I may repeat that the word fever is used as a convenient name for a group of symptoms commonly associated together in febrile diseases. The association of these symptoms, however, is so loose that we regard only the dominant one—the increased temperature—as the essential criterion of the existence of fever. It saves circumlocution to adopt this somewhat vague and common signification of the term fever, although I think it would be an improvement to confine the term to abnormal elevation of temperature. The literature of fever is full of misapprehensions resulting from the various meanings attached to the word by different authors.

All of the bodily functions may be disordered in fevers. The various symptoms or classes of symptoms which are so commonly associated as to be regarded by many as belonging to the febrile process are, in addition to heightened temperature, increased frequency of the pulse and other circulatory disturbances, increased rapidity of respiration, muscular weakness, lessened secretions, disordered nutrition and digestion, and nervous symptoms.

What is the connection, if any, between these symptoms and the elevation of temperature? What degrees of elevated temperature are dangerous to life, and in what does the danger consist? This subject can at least claim the interest that attaches to the questions of the day. The various opinions which have been held by clinicians on these points are too well known to you to require an historical review. I need only remind you that until within a few years the views advocated with especial force for nearly thirty years by Liebermeister have prevailed, although not without considerable opposition. According to these views, the chief source of danger in uncomplicated essential fevers is the elevation of temperature, and the main indication for treatment is the reduction of temperature. Above all, it was urged, with apparently convincing arguments, that the weakness of the heart, which is undoubtedly one of the gravest dangers of fevers, is the direct effect of prolonged high temperature, and is manifested anatomically by parenchymatous or fatty degeneration of the cardiac muscle. Liebermeister sharply defined his position when he said: "A man whose temperature measures continuously 104° F. (40° C.) or more, surely dies in consequence of the elevation of temperature, one in a few days, another after a somewhat longer time, according to the resistance of the individual." "If his temperature reaches 108·5° F. (42·5 C.) or more, then is he irrevocably lost." *

At the present moment there is a decided reaction against these views, a reaction which in some quarters goes to the extent not only of denying that there is danger in febrile temperatures which do not exceed a very high point, but of asserting that the elevation of temperature is a beneficent provision, a most important vis medicatrix naturæ, which should not be checked by the interference of the physician. This reaction of opinion is plainly due in great part to the disappointment which has followed the high hopes raised by the discovery of a number of drugs which are admirable antithermic agents, and nevertheless do not exert over febrile diseases that controlling influence which had been anticipated.

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* Liebermeister, Volkmann's "Sammlung," No. 31, p. 240.

These questions, you may say, are clinical ones, and not much edification is to be expected from their discussion by a pathologist. So far as the propriety of the use of antipyretic agents or of any other mode of treatment in fever is concerned, it is true that the decision must be reached at the bedside and can not and never should be controlled by the results of experimental pathology. But an appeal has properly been made to experimental pathology to shed light upon such questions as the effects of heat upon the functions of the whole body and of its various organs and upon the causes of parenchymatous and fatty degenerations. The arguments advanced in support of the view that all of the characteristic symptoms of fever are directly dependent upon the increase of temperature, and that high temperature is the chief source of danger, are derived no less from experimental pathology than from clinical observations.

Three methods have been employed to determine the effects of increased temperature in fever: one is to study the effects of heat upon animals; the second is to examine in different fevers and in different cases of the same fever the relation of the temperature to the other symptoms and to the general condition of the patient; and the third is to note the influence of reduction of temperature upon these symptoms.

Each method has its limitations. The condition produced by exposure to external heat, even if it be called thermic fever, is something quite different from ordinary fevers, and we can not transfer the results obtained by this method directly to the explanation of febrile phenomena. On the other hand, in the clinical study of fevers it is very difficult and often an arbitrary matter to separate the effects of increased temperature from those of other factors nearly always present. Hence, we find no agreement of opinion among physicians as to what symptoms or lesions in fever are referable to the heightened temperature and what are due to infectious or other conditions often present. Even the frequent or constant association of certain symptoms with elevated temperatures and their subsidence or disappearance by reduction of temperature do not justify us in inferring that the high temperature is the cause of the symptoms, for both may be co-ordinate effects of the same cause, and the so-called antipyretic treatment may influence other conditions as well as the temperature. As has been frequently said of late, the high temperature may be rather an index of the severity of the disease than a source of danger in itself.*

The most direct way of determining the influence of heat upon the body is to raise the internal temperature by external application of heat. Here we are not disturbed by the presence of other factors, such as infection, which render doubtful so many of the conclusions derived from clinical observations as to the effects of high temperatures. For the solution of many problems it is evidently irrelevant whether the source of heat is within or without the body. These experiments, if properly conducted, are calculated to shed much light upon many questions relating to the effects of febrile temperatures.

According to the testimony of all experimenters, a mammalian animal artificially heated dies when its internal temperature has reached 111·2° F. (44° C.) to 113° F. (45° C.). Death is preceded by convulsions, and immediately or soon after death, rigor mortis appears. At the moment of death the irritability of the heart and muscles ceases. Death seems to be due to heart paralysis, and the cause of this is usually set down as heat rigor, but this is not probable, as death generally occurs at a temperature several degrees below that at which rigor of the heart muscle appears.

It is generally argued that temperatures several degrees below those which are fatal must exert toxic effects, and this conclusion seemed to be substantiated by the majority of experimenters, who found that animals whose temperatures were artificially raised to 105° F. (40·6° C.) to 107° F. (41·7° C.), or even to a lower point, manifested signs of illness. These latter results, however, are opposed by those obtained by Rosenthal, and especially by Naunyn,* who points out that the conditions in most previous experiments were not favorable, as the animals were generally placed in small, dark, poorly ventilated metallic boxes. Naunyn succeeded in keeping a rabbit alive for thirteen days with an average temperature of 106·7° F. (41·5° C.).

Following Naunyn's example, I have had constructed a wooden box 3 feet long, 2 feet high, and 2 feet broad, which fits closely within a double-walled galvanized-iron box. The wooden box is provided with a perforated, movable bottom which allows the urine to escape. The space between the two walls of the iron box measures 3 inches across, and is filled with water, which therefore surrounds the inner box on all sides, except at the top, which is left open. The dimensions of this apparatus are somewhat larger than those of Naunyn's heating-box. A folded woolen blanket was drawn over each end of the box so as to leave uncovered at least one third and generally more of the top. A rose burner, placed underneath, served to heat the box. At first a thermo-regulator was employed, but this was found unnecessary, as the temperature of the room varied but little, and there was no difficulty in keeping a sufficiently constant temperature in the box. The experiments were made upon rabbits, and only a single one was placed in the box at a time. Corrected thermometers were used. The temperature of the box was taken a short distance above the bottom, and that of the rabbit at a depth of three to four inches in the rectum. This occasion does not seem an appropriate one to describe these experiments in detail with their protocols. I shall take another opportunity for that, and at present give only a general account of those results which relate to the subject before us.

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* In hyperpyrexia, and in many cases of insolation, there can be no doubt that the high temperatures as such are the main elements of danger. But both of these conditions have important points of distinction from ordinary febrile processes. In hyperpyrexia there is probably almost complete paralysis of heat regulation, and we shall find that an analogous condition with similar dangers sometimes develops in animals artificially heated. The cases of insolation in which the high temperature is so dangerous are analogous to the condition which may be produced in animals by brusque elevation of the bodily temperature through exposure to heat, and which differs from that resulting from more gradual increase of temperature.

* Rosenthal, "Zur Kenntniss d. Wärmeregulirung," u. s. w., Erlangen, 1872; Naunyn, "Archiv f. exp. Path. u. Pharm.," Bd. xviii.

In the box described I have succeeded in keeping for three weeks two large black rabbits, the one with an average rectal temperature of 107·3° F. (41·8° C.), the other with an average temperature of 106·6° F. (41·4° C.). The rectal temperature fluctuated usually between 105·5° F. (40·8° C.) and 108° F. (42·2° C.), scarcely ever sinking below 105° F. (40·5° C.), but occasionally rising as high as 109·5° F. (43·1° C.). The temperature of the box varied between 96° F. (35·5° C.) and 106° F. (41·1° C.). The rabbits lay most of the time stretched out, breathing very rapidly. They took their food greedily and did not appear ill. At the end of the experiment the first animal was removed from the box, and, appearing perfectly well for ten days afterward, it was used for another experiment; the second animal was killed at the end of the experiment, and presented marked fatty degeneration of the heart, liver, and kidneys. Both animals lost weight while in the box.

In these and similar experiments the rabbits were given only moist, green fodder, and were allowed to drink plenty of water, which they took eagerly. It is important for the success of the experiment that the temperature should be gradually and not suddenly raised.

Different animals offer varying degrees of resistance to the effects of high external temperatures. It has seemed to me that black and gray rabbits surpass in this respect white rabbits. The same temperature of the box does not produce in all cases the same rectal temperature in different animals, or in the same animal at different times. No factor is of more importance in determining the effects of external heat than the animal's power of temperature-regulation. Failure of this power is manifested by a sudden rise of internal temperature, which may quickly attain a point incompatible with life. This event may take place without any alteration in the box temperature. The degree of internal temperature at which this paralysis of heat-regulation occurs varies in different animals. One may be able to hold his temperature from further rise at as high a point as 109·5° F. (43·1° C.); in another, after the temperature has reached 107·6° F. (41·5° C.), there may occur, without any change in the box temperature, a sudden and often fatal elevation of temperature. In general, temperatures between 108° F. (42·2° C.) and 109° F. (42·8° C.) may be regarded as critical temperatures for these animals. One is forcibly reminded by these sudden and dangerous elevations of temperature of the occurrence of hyperpyrexia in certain fevers of human beings, and there is reason to believe that this, too, is caused by paralysis of heat-regulation.

It seemed to me of some practical interest to determine what effect upon the rabbit's power of resisting high temperatures was exerted by exhaustive influences, particularly by anæmia. For this purpose rabbits which had been moderately bled and others which had been used for some other experiments were placed in the hot box. It was found that these animals were, although not without occasional exceptions, unmistakably less resistant to the effects of high temperatures than robust animals. They succumb sooner and at lower box temperatures.

We may now consider what inferences may be drawn from these and similar experiments as to the effects of high temperatures. It seems clear that a considerable part of the current arguments based upon experiments concerning the injurious effects of high temperatures must be revised in the light of Naunyn's experiments and of those which I have briefly related. Because an animal may be killed by raising its temperature to 111° F. (43·9° C.) to 113° F. (45° C.), it does not follow that an increase of temperature of four or five degrees above the normal involves danger to life, or even any serious disturbance of the functions of the body. Although experiments in hot-air chambers show that in man brusque elevations of the temperature by only a few degrees give rise to serious symptoms, Krishaber * found that by habituation his temperature could be raised to 106·5° F. (41·4° C.) to 107·2° F. (41·8° C.) without much discomfort. As small animals generally succumb more readily than large ones to artificial heating, it is not likely that the power of resistance in human beings is less than that found to exist in rabbits, and there is reason to believe that it is greater.

We can not transfer directly to human beings the highest temperatures at which we found rabbits could exist without serious discomfort, save increased respiration. A rabbit's temperature is normally considerably higher than that of man, and apparently slight causes suffice to produce marked fluctuations. The normal rectal temperature of the rabbits used in my experiments was generally between 102° F. (38·9° C.) and 103° F. (39·4° C.). The highest average temperature at which a rabbit was kept for three weeks in the hot box exceeded, therefore, by from four to five degrees F., the average normal temperature. Such an increase would not correspond to a high febrile temperature in man. We can, however, with equal and probably greater propriety, compare this temperature with that at which death surely occurs in a condition bordering on heat rigor. This temperature (111° to 113°) is probably about the same for man as for rabbits and other mammalians. From this point of view the inference may be drawn, although, of course, with much reserve, that human beings may tolerate temperatures of 107° F. (41·7° C.), or even higher, for a considerable time. This inference is supported by clinical observations, especially in cases of relapsing fever.

As already pointed out, the condition produced by artificial heating is not directly comparable with that in fever. In the former the loss of heat from the body is reduced to a minimum; the superficial temperature is three or more

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* Krishaber, "Gaz. méd. de Paris," 1877.

degrees higher than the internal, so that the average temperature of the whole body is higher than in fever with the same internal temperature. We can not say, therefore, but that man may tolerate considerably higher internal temperatures when the elevation is brought about under conditions in which the discharge of heat is not checked than when the temperature is forced up by stopping heat-dissipation. This would be proved if confidence could be placed in the enormous elevations of temperature reported by Teale and others. In these cases, however, even if authenticated, it is probable that heat is abnormally distributed in the body, and we can not infer that the internal temperature is uniformly raised to such paradoxical heights.

It is of the utmost importance to bear in mind that, as my experiments have shown, not only do animals differ in their power of tolerating high temperatures of the body, but this resistance may be weakened by various depressing causes. Nothing would be more irrational than to conclude, because one individual in a certain condition can tolerate very high temperatures, another in a different condition possesses the same power. In fevers we have various factors, particularly infection, which we may well believe can lower the tolerance of high temperatures. That in some fevers, particularly relapsing fever, this does not appear, or only partially, does not disprove that in another fever, such as typhoid or pneumonia, the system may be placed by other factors of the disease in such a condition that even moderately high temperatures are injurious. It does not seem to me proper in these cases to lay, as some seem inclined to do, the sole stress upon the element of infection. This is in all likelihood the determining factor, but the practitioner can not shut his eyes to the possibility that under its influence the high temperature as such is a source of danger to his patient.

With these restrictions I shall surely not be misunderstood when I assert that temperatures which are ranked as high febrile temperatures do not in themselves, independently of other factors, exert any such injurious influence as has been usually attributed to them.

Our attention up to this point has been directed to the effects of high temperatures upon the general condition of the body. It is of importance for the proper understanding of fever to determine the influence of heat upon the structure and functions of the various organs. To what extent can the febrile disorders of respiration, of circulation, of secretion, of nutrition, of innervation, be attributed directly to the elevated temperature? These are questions which can be answered better by experimental methods than by clinical observation, for the latter has to deal with the effects of heat complicated by other circumstances whose influence can not be accurately determined. The one method, however, should be made to control the other.

The most striking immediate effect of heat upon an animal is increased frequency of respiration. When a dog or a rabbit is placed in an atmosphere of 100° F. (37·8° C.), it at once begins to pant, and the respirations may run up to 150 or more. The causation of this increased respiration, to which the name heat dyspnœa has been applied by Ackermann,* has been repeatedly investigated. Goldstein,† in Fick's laboratory, found that, by applying to the carotid arteries tubes through which hot water was flowing, the respirations might be greatly increased in frequency. Goldstein's experiment is usually cited as the crucial one showing that the increased breathing is due to the effect of the heated blood upon the respiratory centers in the medulla oblongata. Sihler,‡ working in the Biological Laboratory of the Johns Hopkins University, however, has demonstrated that the increased respiration of an animal exposed to heat is due to two causes, warmed blood and stimulation of the skin by the heat, and that probably skin stimulation is the more important factor. Some of Sihler's criticisms of Goldstein's experiments have been met by Gad and von Mertschinsky,# who have made it evident that increased temperature of the blood stimulates the respiratory centers or increases their irritability. Section of the vagi does not check heat dyspnœa, so that this does not result primarily from the action of the increased temperature upon the terminal pulmonary expansion of these nerves. The removal of afferent impulses from the skin by section of the spinal cord does, however, exert so marked an influence that it can not be doubted that heat stimulation of the skin is an important element in the causation. I have convinced myself of the correctness of Sihler's explanation by observing that in the hot box at temperatures of 90° F. (32·2° C.) to 95° F. (35° C.) rabbits often preserve their normal temperature and still their breathing is markedly increased, and that, on the other hand, upon taking them out of the box the respirations may sink before the internal temperature begins to fall. In one striking experiment the respirations fell immediately to about normal upon removing from the hot box a rabbit whose skull had been trephined on each side of the median line and the optic thalami punctured with a needle.

We can not transfer directly to human beings the results of experiments on heat dyspnœa in animals, because in the latter respiration has a far more important function in temperature-regulation than in the former. To keep cool, a dog pants under circumstances when a man sweats. As heat-regulation is largely influenced by the cutaneous temperature, it is not improbable that in man heat stimulation of the skin is less prominent than the warmed blood acting upon the respiratory centers in increasing the frequency of respiration in fever.

Inasmuch as disturbances of the heart and of the circulation in general are among the most important symptoms of fever, it is natural that much attention should have been given to the study of the effects of heat upon the organs of circulation. The supposed injurious effects of prolonged high temperatures in fever have been usually attributed especially to some toxic action of heat upon the heart.

That the pulse-rate is quickened by artificially heating rabbits and dogs has long been known. The positive dem-

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* Ackermann, "Deutsches Arch. f. klin. Med.," Bd. ii.

† Goldstein, "Würzburger Verhandl.," 1871.

‡ Sihler, "Journal of Physiology," vol. ii, and "Studies from the Biological Laboratory, Johns Hopkins University," Baltimore, vol. ii.

Gad and von Mertschinsky, Virchow u. Hirsch's "Jahresbericht," 1881, i, p. 197.

onstration that this acceleration is due to the direct action of the heated blood upon the mammalian heart itself was first given by my colleague, Professor Martin.* By conducting through the dog's heart, isolated physiologically by the ingenious method which he devised, Martin proved that the heart "beats quicker when supplied with warm blood and slower when cold blood is supplied to it; also that the rate of beat depends much more upon the temperature of the blood in the coronary arteries than on its temperature in the right auricle or ventricle." These experiments make it unnecessary to recur to any action of the heated blood upon extrinsic cardiac nerves or nerve-centers in order to explain the quickened pulse of fever. Moreover, Fick † found that the nervous centers of the heart and blood-vessels were unaffected by heating the blood flowing through the carotid arteries in the manner adopted by Goldstein in his experiments on heat dyspnœa.

Professor Martin has kindly permitted me, in this connection, to mention certain unpublished results of experiments which he is now conducting upon the effects of heat and cold on the isolated heart. As these results are pertinent to our subject, I gladly avail myself of this privilege. The table of an experiment which I have examined shows that the isolated cat's heart beats regularly and more and more rapidly as the temperature of the blood is gradually raised to 111·2° F. (44° C.). At this point the beats become irregular, but are restored to their normal rhythm by feeding the heart with cooler blood. The temperature of about 111° F. (43·9° C.) appears to be a critical one for the isolated heart. Above 111·2° F. (44° C.) to 113° F. (45° C.) the pulsations become slower instead of quicker as the temperature is raised. At 122° F. (50° C.) the heart's action ceased, but it was made to beat again by supplying it with cooler blood, showing that the cessation was not due to heat rigor. This interesting experiment teaches, among other things, that very high temperatures may produce results differing not only in degree but also in kind from those of temperatures only a degree or two lower.

We may consider it, then, established that increased frequency of the pulse in fever is referable to the direct action of the warmer blood on the nervo-muscular substance of the heart itself. Clinical observation of cases of fever makes it evident that there may be and often are present other circumstances which influence the rapidity of the heart's pulsations, circumstances which in themselves may slow or may quicken the pulse. Large series of statistics, therefore, are required to bring out the ratio between the pulse-rate and the temperature in fever, and even then for any given temperature the maximum and the minimum pulse-rates lie so far apart that the statement of the average increase in the frequency of the pulse for each degree of rise of temperature, such as has been computed by Liebermeister, has very little value.

Not only is the pulse-rate quickened in fever, but there are often other and more serious circulatory disturbances. In the fever produced in rabbits by injection of the swine-plague bacillus I find a reduction of the blood-pressure measured in the carotid artery, and others have obtained similar results in the artificial fevers of animals. The determination of the blood-pressure in fevers of human beings by means of Basch's sphygmomanometer has given in the hands of different experimenters such contradictory results that no conclusion can be drawn, unless it be the very probable one that the blood-pressure varies, being sometimes high, sometimes low, and sometimes normal in fever. That the arterial tension is often reduced is made evident by the marked dicrotism of the pulse-wave. This dicrotism, however, characterizes particularly septic and typhoid types of fever, and is absent during the chill of intermittent fever and often in exanthematous and some other fevers, so that we can not consider the blood-pressure and arterial tension as having any such definite relation to fever as the pulse-rate has.

It has been observed by Paschutin, Senator, and Mendelson * that the blood-pressure rises with increasing bodily temperature produced by exposure to heat. Mendelson found that the pressure began to sink as the temperature approached a point incompatible with life. In these experiments the animals were subjected to rapid elevations of temperature. I find that when a rabbit is gradually and cautiously heated in the hot box used in my experiments, the rise of temperature is less marked and may not surpass, even for temperatures of 107° F. (41·7 C.), the normal limits of variation which may be found in the blood-pressure of the same animal examined at different times. These measurements, however, are not very conclusive, for, as has been already remarked, rabbits which have been operated upon do not stand artificial heating well.

I have observed that the rhythmical contractions of the blood-vessels of the rabbit's ear are feeble or absent when the temperature is much elevated by artificial heating, whereas it will be remembered that in experimental septic fever these contractions are irregular and exaggerated.

Upon the whole, I think that we are justified in concluding that the variations of arterial tension in fever are much less dependent upon increased temperature than upon other factors, such as infection.

But the corner-stone of the doctrine which teaches that a chief source of danger in fever is the elevation of temperature is not the effect of increased temperature upon the pulse rate or the arterial pressure, but is the belief that prolonged high temperature exerts a directly paralyzing influence upon the heart. The main support of this belief is not the admitted fact that extremely high temperatures paralyze the heart, for these critical temperatures lie far above the ordinary high temperatures of fever and in a region where all admit the dangers of the excessive internal heat. The stately superstructure has been built up chiefly on the basis of experiments showing that, when the internal temperature of animals has been maintained for some time at a high point by exposure to external heat, parenchymatous or fatty degeneration of the heart muscle ensues. It is true that all experiments are not in accord upon this point, and that, as a rule, pathological anatomists have not given adherence to the doctrine that parenchymatous degenerations are chiefly dependent upon high temperature; still, this doctrine has gained a wide acceptance among clinical men, and is advocated with special force by Liebermeister. I have therefore thought it desirable in my experiments to give special attention to this question.

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* Martin, "The Direct Influence of Gradual Variations of Temperature upon the Rate of Beat of the Dog's Heart," "Philosophical Transactions of the Royal Society," Part ii, 1883.

† Fick, Pflüger's "Archiv," Bd. v.

* Paschutin, Ludwig's "Arbeiten," 1873; Senator, Du Bois-Reymond's "Archiv," 1883, Supplement. Band; Mendelson, "On the Renal Circulation during Fever," "Am. Jour. of the Med. Sciences," Oct., 1883.

Among previous experimenters on artificial heating of animals, Iwaschkewitsch, Wickham Legg, and Litten may be mentioned as finding parenchymatous or fatty degeneration of the heart, liver, and kidneys, and Walther, Obernier, and Naunyn as obtaining only negative results. It is not necessary here to enter into a criticism of these different experiments, which are of very unequal value. Litten's * experiments on the one side, and Naunyn's † on the other, appear to have been the most carefully conducted. Litten, whose experiments are those usually cited, kept guinea-pigs in a double-walled metallic box, which was at a constant temperature of 98·8° F. (37° C.) with dry air, or of 96·6° F. (36° C.) with moist air. He never failed to find fatty degeneration at the end of from thirty-six to forty-eight hours. The liver was first affected and then the heart and kidneys, which became fatty by the second or third day. The animals did not survive longer than five or six days, and by that time the fatty degenerations had reached an extreme degree. Von Recklinghausen ‡ urges with apparent justice against these experiments that the enforced inactivity of the muscles and the imperfect ventilation may have had as much to do in causing the degenerations as the high temperature had. These objections find support in the experiments of Naunyn, who, making use of a much larger and better-ventilated heating box than Litten, failed to find any parenchymatous or fatty degeneration in his rabbits after they had been exposed for two weeks to higher temperatures than Litten employed.

As my experiments confirmed in other respects Naunyn's results, I was quite unprepared to find that my rabbits, after a variable period of artificial heating, quite constantly presented fatty degeneration of the heart, liver, and kidneys, and sometimes of the diaphragmatic and intercostal muscles. I never found the degeneration at so early a period as Litten did. It was not until the rabbit had been kept for at least a week with an average rectal temperature of 106° F. (41·1° C.) that the degeneration was noticed, and then only in moderate degree. The higher and the less fluctuating the internal temperature, the more certain was the degeneration to appear. I could reckon upon obtaining rabbits with well-marked fatty degeneration of the heart by keeping them for ten days with a rectal temperature between 107° F. (41·7° C.) and 108° F. (42·2° C.). I am not prepared to account for the discrepancy in this respect between Naunyn's and my experiments. The box used was larger than that employed by him, and every care was taken to keep it well ventilated by leaving at least one third and often one half of the top open.

I do not think that my experiments altogether do away with the force of von Recklinghausen's criticisms. The fact that in these experiments the degeneration made its appearance at the end of a week or ten days, and in Litten's in forty-eight hours, to say nothing of Wickham Legg finding it at the end of twelve hours, would suggest that if the rabbits were heated in a still larger and better-ventilated apartment, the degeneration might not occur at all, or might be deferred to a much later period. In my opinion, however, even if full allowance is made for this line of argument, we must still admit that prolonged high temperature is an important factor in the causation of fatty degeneration.

That it is not the sole factor no one can doubt. As is well known, fatty degeneration is produced by anæmia and by a variety of poisons, and even in fevers most pathologists are convinced that it bears a closer relation to the kind and the degree of infection than it does to the height of the temperature. It is more frequently absent than present in pneumonia, even where there have been symptoms of heart failure.

The kind of degeneration present in my rabbits was fatty and not parenchymatous. Probably all who make many post-mortem examinations will agree with von Recklinghausen that altogether too liberal use has been made of the diagnosis of parenchymatous degeneration, and not sufficient account has been taken of the anatomical changes of the parenchyma produced by post-mortem chemical changes, such as acid formation, etc.

In order to determine what influence is exerted by infection combined with high temperature, I inoculated a rabbit, which had been in the hot box for four days, with the bacilli of swine plague. These bacilli, if not identical with, are closely allied to those of rabbit septicæmia and are extraordinarily virulent for rabbits. In thirty-six hours the animal, which had remained at a high temperature in the box, was dead, and the most extreme fatty degeneration of the heart and other organs was found. As in other experiments the degeneration had not made its appearance at this early date, there can be no doubt that the infection was an important element in the causation. That it received powerful support in the high temperature, however, is proved by the fact that little or no degeneration of the heart is observed after infection with this organism when the animal is kept at ordinary temperatures.

Admitting, then, that high temperature aids in the causation of fatty degeneration of the heart in fever, the question arises: What do we know of the effects of this degeneration upon the functions of the heart? I will say nothing of the growing tendency to transfer a large part of the classical symptomatology of Quain's fatty heart to other conditions, particularly to disease of the coronary arteries and chronic myocarditis; we are concerned at present only with the occurrence of this degeneration in fever. Have we not been somewhat hasty in assigning to degenerations of the heart muscle so large a share in the production of heart-failure in fevers? One can not look at a muscular fiber in which the

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* Litten, Virchow's "Archiv," Bd. lxx.

† Naunyn, *op. cit.*

‡ Von Recklinghausen, "Handb. d. allg. Pathologie d. Kreislaufs u. d. Ernährung," p. 512, Stuttgart, 1883.

striated substance is all replaced by fatty globules and suppose that its functional activity was unimpaired, but into what serious error should we fall if we attempted to deduce from the anatomical changes in the liver-cells or the renal epithelium the corresponding functional disturbances! Certain it is that symptoms which are usually considered those of heart-failure are often enough present in fevers without finding at the autopsy any degeneration of the heart, and, on the other hand, such degeneration may be discovered without any history of these symptoms, although, of course, the two are often associated.

In the face of these doubts it seemed desirable to determine, if possible, experimentally the damage inflicted upon the cardiac functions by the presence of fatty degeneration of the heart muscle. That this degeneration may exist without apparent injury is rendered probable by the fact that a rabbit which has been kept for three weeks in the hot box at a high temperature, and in which there is every reason to suppose that fatty degeneration has occurred, may present no symptoms of heart paralysis, and when removed from the box appear and remain perfectly normal. An instance has already been mentioned where one rabbit at the end of three weeks was killed and presented marked fatty degeneration of the heart, and another, which had possessed a higher average rectal temperature, was removed from the box at the end of the same period and appeared for ten days perfectly normal, when it was used for another purpose. That this degeneration can be recovered from is, moreover, rendered probable by clinical experience, and is universally admitted.

Once, in teasing out a bit of fatty heart muscle from one of the rabbits, I made a curious observation. Near the edge of the cover-glass, where there was a slight current in the physiological salt solution, rhythmical contraction was observed in a group of muscle-fibers. This interesting spectacle could be watched under the microscope for ten minutes. These contracting fibers were filled with fatty globules, and only here and there, and then indistinctly, could any trace of striation be detected. This observation teaches that a fatty-degenerated muscular fiber is capable of contraction, but of course warrants no further conclusions.

Far more important than any inferences which can be drawn from such observations is the measurement of the actual blood-pressure in animals whose hearts have undergone fatty degeneration. This I have done in three instances. The rabbit was removed from the box at the end of from ten days to two weeks, and the pressure in the carotid artery was measured by a mercury manometer attached to Ludwig's kymograph. In no instance was the blood-pressure found to be lower than that normally present in rabbits. In an experiment recently performed, the average pressure was 125 mm. of mercury; the pulsations were regular; the heart responded to stimulation of the vagi in an entirely normal manner. After such stimulation the pressure in one case rose to 176 mm. of mercury. Immediately after the measurement of the blood-pressure the rabbit, as in the previous instances, was killed, and marked fatty degeneration of the muscular fibers was found. In many of the fibers the striation could not be made out, and only fatty globules were visible; in others, which also contained fatty granules, the striation was distinct. The degeneration involved the whole muscular structure of the heart. A similar appearance in a human heart would be considered to indicate well-marked fatty degeneration.

These experiments show that a rabbit's heart, which has undergone marked fatty degeneration from exposure to heat, may perform its functions, to all appearances, and for the time being, in a perfectly normal manner. There is at least one consideration which should make us cautious in drawing far-reaching conclusions from these experiments. There are diseases of the heart (I need only refer to lesions of the coronary arteries) in which the functions of the organ are performed for a longer or shorter time apparently in a perfectly normal way, and then heart-failure suddenly appears. It is probable that here, too, the blood-pressure would be found normal at a certain period of the disease, and still it would be an error to suppose that the lesion did not damage the heart. Whatever force there may be in this analogy, I still think that these experiments, as well as careful pathological and clinical observations, necessitate some revision of the current opinions concerning the significance of fatty degeneration of the heart in fever.

So much time has been devoted to a consideration of the effects of heat upon the respiration and the heart that the limits of the present lecture will permit hardly more than a summary of the effects exerted by heat upon other functions and organs of the body. On account of the great clinical importance of the subject, it seemed desirable to treat with special fullness the influence of increased temperature on the heart.

What part has increased temperature in producing febrile consumption of tissue? In the first lecture mention was made of Pflüger's experiments, showing that animals with elevated temperature produced by exposure to heat absorb more oxygen and excrete more carbonic acid than at the normal temperature. This is in conformity with the general law that within certain limits cell activity is more energetic at high than at low temperatures. It was also shown in the first lecture that only a comparatively small part of the increased oxygen absorption and carbonic acid elimination in fever could be referred to the immediate effects of high temperature. It has not been demonstrated that the respiratory gases in human beings are increased by artificial elevation of temperature. Indeed, Voit * was unable to find any such effect of increased temperature in human beings on the respiratory gases as both he and Pflüger observed in animals.

Inasmuch as increased disintegration of nitrogenous material is such a prominent disorder in fever, much attention has naturally been given to determining how far this can be explained by elevated temperature. That it can not all be so explained is proved by the interesting observation of Sydney Ringer that excessive elimination of urea antedates the rise of temperature in intermittent fever, and Naunyn has found the same to be true of the septic fever of dogs.

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* Voit, "Zeitschrift für Biologie," Bd. xiv.

The experiments which have been made to determine the influence of artificial heating on the amount of urea excreted by man and by animals have yielded contradictory results. A number of these experiments are of little or no value because no attention was given to establishing beforehand nitrogen equilibrium. Schleich's * experiments may be mentioned as perhaps the most accurate of those showing an increase in the urea excreted under the influence of exposure to heat. The more recent experiments of Simanowsky † were made in Voit's laboratory, with special precautions as to the establishment of nitrogen equilibrium. He failed to find any increase in the excretion of urea as the result of exposure to external heat. While, then, this question must be left at present *sub judice*, there can be no doubt that only a part at least of the excessive disintegration of nitrogenous substance in fever can be assigned to the influence of the increased temperature.

The loss of weight exhibited by animals kept for a long time in a hot atmosphere is usually explained by the excessive evaporation of water from the body. In many of my experiments the rabbits were freely supplied with food and water, and still the loss of weight was very noticeable. I am inclined, therefore, to attribute to the increased temperature under these conditions a decided influence upon the consumption of tissue.

Senator ‡ found the urine of rabbits artificially heated to contain more albumin than is found occasionally in the urine of healthy rabbits. This observation I have not been able to confirm on the rabbits in my experiments, and probably this difference is to be explained by the more rapid and intense heating employed in Senator's experiments. Senator explains the heat albuminuria by the rise of arterial pressure in the renal vessels, but this is not in conformity with the interesting experiments of Mendelson,* who found, by means of Roy's oncometer, that both in thermic and septic fevers of dogs the kidney was anæmic, while the general blood pressure was elevated.

No satisfactory explanation has yet been offered of the diminution of perspiration which distinguishes fever so strikingly from the condition produced by exposure to high external temperatures. Luchsinger's assertion that this is the result of lessened irritability of the sweat centers in the spinal cord remains to be proved, and at the best is not a satisfying explanation.

Bokai, ‖ in a recent experimental research on intestinal peristalsis in thermic and in septic fevers, comes to the conclusion that the constipation of fever is to be explained by the heated blood stimulating the nerves inhibiting intestinal peristalsis. If this should be confirmed, then it would be proved that at least three symptoms of fever, the quickened respiration and pulse and the constipation, were direct effects of elevated temperature.

When we consider the important nutritive changes in the muscles accompanying increased thermogenesis we shall be inclined to attribute to these alterations and the associated abnormal innervation, rather than to increased temperature, the muscular pains and weakness which form such an early and frequent complaint in many fevers.

The investigations hitherto published of changes in the blood produced by increased temperature within febrile limits are not of a sufficiently definite and satisfactory nature to warrant any consideration on the present occasion. Nor am I acquainted with any positive experimental evidence (save Bokai's work, already mentioned) that increased temperature is concerned in the production of the digestive disorders of fever. It has already been said that the rabbits with high internal temperatures in the hot box ate greedily, but these voracious animals can not be considered favorable subjects to test this question.

Special emphasis has been laid by Liebermeister and those who accept his teachings upon the dependence of the nervous symptoms of fever, particularly the so-called typhoid symptoms, on the elevation of temperature. There is, however, abundant clinical evidence to disprove this doctrine. Reference need be made only to relapsing fever, and especially to the aseptic fever described by Genzmer and Volkmann, in which there is entire absence of the whole group of so called nervous symptoms. Moreover, Liebermeister's opinion in this respect is not supported by adequate experimental evidence. Unless the temperature of the brain or of the entire animal is brusquely raised to a high point by coarse methods, no disturbance of the cerebral functions is noticed until the temperature reaches a critical point, beyond which further increase is likely to prove rapidly fatal. At this critical point the animal, which before has lain quiet, becomes very uneasy, and if the temperature rises higher it has convulsions and coma and dies.

I have endeavored to bring before you in this lecture the experimental evidence relating to the effects of increased temperature upon the general condition of the body and upon the functions of its various organs. I have given account as briefly as possible of some experiments which perhaps shed additional light upon this important subject. In the course of this lecture emphasis has repeatedly been laid upon the necessity of controlling the results of the experimental method by clinical observation, and here and there I have endeavored to institute this control. Further than this I shall not attempt to set before you the clinical evidence regarding the effects of increased temperature in fever. There are those here more competent than I to deal with this side of the question. We may feel assured that when all the facts are before us and are properly interpreted there can be no lack of harmony between the results of experimental and those of clinical investigations.

The Hæmoglobin in Chlorosis.—"Dr. O. Barbacci, of Berlin," says the "Lancet," "found by using Fleischl's hæmometer in a number of chlorotic patients that the hæmoglobin varied from 39 to 50 per cent. of its amount in health. After from two to four weeks' treatment with iron the patients all exhibited a marked improvement in their general condition, and at the same time the hæmoglobin was found to have increased from 10 to 30 per cent. It then appeared to remain stationary, the normal amount not being reached even after a long course of treatment and a very great improvement in general health."

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* Schleich, "Arch. f. exp. Path. u. Pharm.," Bd. iv.

† Simanowsky, "Zeitschrift f. Biologie," Bd. xxi.

‡ Senator, Du Bois-Reymond's "Archiv," 1883, Supplement. Band.

* Mendelson, *op. cit.*

‖ Bokai, "Archiv f. exp. Path. u. Pharm.," Bd. xxiii.

Original Communications.

ON DOUBTFUL FRACTURES OF THE NECK OF THE FEMUR, AND THEIR IDENTITY WITH AN ALLEGED FORM OF ARTHRITIS DEFORMANS.*

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It is a fact well known to all that certain fractures of the neck of the femur fail to present during the first week or two the usual symptoms by which in other cases the diagnosis is so easily made; but these exceptions are so rare, both actually and relatively, that the possibility of their occurrence is likely to be overlooked or dismissed when a case of injury to the hip presents itself, and a fracture can not clearly be made out. The oversight may result in serious consequences to the patient and possibly to the physician. The former, after having been assured of the unimportant and transitory nature of the injury which he is thought to have received, is encouraged to leave his bed and perhaps to try to overcome his disability by such use of the limb as is within his power. But the pain and disability persist, and after a longer or shorter interval the unmistakable symptoms of fracture appear. The delay and the failure to take timely measures to favor union without deformity may not only work actual injury to the patient, but may also inspire the feeling that he has not received the care and attention to which he was entitled. Usually the diagnosis becomes clear while the physician is still in attendance, within the first two or three weeks, but sometimes the patient's circumstances are such or his pain so moderate that regular and frequent visits are not made, and then the recognition of the deformity may be long delayed, perhaps until after other advice has been sought. With this tardy recognition comes the temptation to seek another explanation of the deformity and disability than that of an overlooked fracture, and the one commonly resorted to is a supposed absorption of the head and neck of the femur excited by the contusion. It is to these two points that I ask the attention of the society to-night—the means by which the diagnosis of probable fracture of the neck of the femur may be made when shortening and deformity are absent and the functional disability incomplete, and, secondly, the alleged occurrence of rapid absorption of the head and neck of the femur after a simple contusion.

Of the nine cases in which a fracture has not been early recognized that have come under my observation, and of which I have preserved notes, the age of the youngest patient was twenty-three, of the oldest sixty-four, and in six it was less than forty-two years, a striking contrast to the average age of patients suffering from this injury, and one that is probably not foreign to the character of the fracture and the cause of the difficulty of recognition. In five cases the cause was marked violence, as the overturning of a carriage, collision with a horse-car, or falling from a considerable height; in two, those of a man of sixty-two and a woman of sixty-four years, it was a simple fall to the ground while walking. Of one case, that of a man forty-two years old, I present the specimen, obtained at his death six months after the accident. It shows an ununited fracture extending from the junction of the neck and great trochanter at the digital fossa downward and forward nearly to the junction of the head and neck below and a little in front. The portion of the femur above the lower trochanter is inclosed in an irregular mass of spongy bone convex exteriorly, and presenting on its mesial aspect a cavity in which the portion of the neck still attached to the head closely fits, and into which the upper end of the shaft projects and supports the broken surface of the neck. Apparently the trochanter was broken at the time of the accident, and only its posterior part seems to have preserved its normal relations with the shaft. The interlocking of the neck and shaft is such that the patient for some months previous to his death was able to walk without crutch or cane. The shortening recorded in the history of his case at the time of his discharge was half an inch, but during the progress of the case, six weeks after the accident, shortening of one inch and an eighth had been found, and the positive diagnosis of fracture was then for the first time made.

In connection with this specimen, and as furnishing proof by direct examination that an individual who has just sustained a fracture of the neck of the femur may not only present no deformity, but may even be able to walk and bear his weight upon that limb, I will briefly quote the reports of a few other cases:

1.* A woman, fifty-six years, old was admitted with redness and swelling of the thigh, and fluctuation at its outer upper portion. Three months previously she had fallen on her left side, and from that time had had a slight halt in walking, but the injury had not kept her from her usual occupations. Because of pain, measurements were not made. The abscess was opened, and she died on the eleventh day. The neck of the femur was found to be broken within the capsule, and the abscess communicated with the joint through a laceration in the capsule.

2.† A man, twenty-six years old, was struck across the upper portion of the left thigh and groin by a heavy piece of timber. He came the next day to the hospital, traveling some distance in the cars and walking from the station to the hospital, a distance of more than a furlong, with the aid of a stick. Pain, eversion, half-inch shortening, deep crepitus. An abscess formed, and he died on the twenty-seventh day. The neck of the femur was broken directly across, immediately behind the head.

3.‡ A patient of my own, sixty-five years old, fell down a flight of stairs, rose without assistance, walked to and down the next flight, and then suddenly found his left leg powerless. Eversion and half-inch shortening two days later. He died in the third week of erysipelas. The fracture was almost directly transverse and close to the head; a strip of periosteum half an inch wide on the under side of the neck remained untorn.

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* Read before the New York Surgical Society, March 14, 1888.

* McTyer, "Glasgow Med. Journal," 1831, p. 52.

† Hunt, "Philadelphia Med. Times," Oct. 26, 1872, p. 49.

‡ Stimson, "Fractures," p. 498.

4. R. W. Smith* reported the case of a man fifty-two years old who had been injured by a fall while walking, and had been able to walk a few yards after the accident. Eversion, half-inch shortening. Death by bronchitis on the sixteenth day. The fracture was irregular, and ran from the junction of the head and neck in front downward, backward, and outward, with a wedge-shaped prolongation that overlapped the lower fragment.

A number of cases have been reported in which the patients walked for a longer or shorter time after receiving the injury, and in which the later clinical evidence of the presence of fracture seemed clear. I shall refer to them again in connection with the second question—that of a possible interstitial absorption.

The circumstances under which a doubtful fracture of the neck of the femur presents itself are, in general terms, as follows: The patient has received a blow upon the hip, and this blow, if the patient is elderly, may have been slight; if he is young, it was probably violent. He complains of pain at and below the hip, both spontaneous and on motion, and additional pain is excited by pressure in front of or behind the junction of the neck and trochanter. He is able to raise the knee, perhaps even the foot, from the bed, and, exceptionally, may even be able to walk. There is no recognizable shortening, no change in the position of the trochanter, and but slight eversion, if any. Communicated movements of the limb are restricted in all directions, presumably by muscular opposition aroused by pain or the fear of it. Pressure upward against the foot or knee, or inward against the trochanter, gives no pain; in two cases I have noted that the trochanter could be grasped and the body forcibly shaken without pain.

I will quote two cases in illustration:

A large, fleshy woman, sixty-four years old, fell while walking, and found herself unable to rise or to walk without help. She was brought to the Presbyterian Hospital, January 31, 1888. When examined on the following day she complained of pain at the hip and along the outer and upper part of the thigh; was able to raise the knee, but not the foot, from the bed. There was no eversion of the limb; all communicated movements, including inversion and eversion, were restricted and painful. No deformity was recognizable on inspection, palpation, or measurement, except that the tissues in front of the neck of the femur seemed less depressible than upon the other side. Forcible pressure of the whole limb upward or of its upper part inward caused but little, if any, pain; pressure in front of the neck near the trochanter was painful, and also pressure over a small area at the corresponding point behind. The diagnosis of probable fracture of the cervix femoris was made, and Buck's extension with about ten pounds applied. After four weeks, when all pain except a little on deep pressure in front had disappeared, the dressing was removed; measurement failed to show any shortening; communicated movements were restricted and painful. After another week the patient was allowed to sit up, and attempted to walk a few steps. Three days later she complained of pain, and measurement showed half an inch shortening; there was distinct eversion, marked tenderness on pressure in front of and behind the neck, and spontaneous pain along the upper and outer part of the thigh. The extension was reapplied, and the patient is still (March 10th) in bed and comfortable.

The second case was that of a man aged forty, who fell on the ice in January, 1887, and was able to walk with help part of the way home. The record shows only that there was no deformity or shortening, and that he was able to raise the heel from the bed. The diagnosis was "probable fracture of the neck," and an extension apparatus was applied. In the third week he was free of pain and could move the limb so freely that he insisted upon being allowed to leave his bed. Two days afterward one inch shortening and marked eversion appeared, and the case thenceforward followed the usual course of fracture.

The symptoms which seem to me specially worthy of attention are the tenderness on deep pressure in front of and behind the outer part of the neck and lack of depressibility at the outer side of Scarpa's space. The latter sign was pointed out a few years ago by Hennequin, and I have found it constant in all well-marked cases of fracture and frequent in the doubtful ones, and have learned to look upon it as an important aid to diagnosis. Localized tenderness on pressure in front and behind seems to me to have the same significance and value as in injuries of other bones—that is, to be strongly suggestive, but not demonstrative, of fracture. Spontaneous pain referred to the outer, anterior, and upper portion of the thigh has been so prominent a feature in four of my cases that it seems proper to ask your attention to it in the future. In none of the four did it appear to be the result of direct violence inflicted upon the region.

These are the only signs that point toward fracture, and they would probably, in most cases, be sufficient to put the surgeon upon his guard were it not for the absence of other signs upon which an unbroken experience has brought him to rely perhaps too implicitly. Shortening is so constant a symptom that, when absent in undoubted cases, it is sometimes thought necessary to invoke a possible asymmetry as an explanation, and in doubtful cases its absence is often deemed an almost certain proof of the non-existence of fracture. And yet a little reflection will show that it is in doubtful cases that shortening is not to be expected—cases in which there is a transverse fracture of the narrow part of the neck without separation, and with preservation of the continuity of more or less of the periosteum, the "cervical ligament" of R. W. Smith, or those in which the line of fracture is irregular and oblique at the base of the neck without splintering or crushing, and with close interlocking of the fragments. Furthermore, the chance of error in measuring is great, and the precautions necessary to escape it are, I believe, not generally appreciated as fully as they should be, for a slight difference in the abduction or flexion of the limbs is sufficient to conceal a difference of half an inch in length.

Eversion, or loss of inversion, when absolute, depends upon the same change in the relations of the neck and shaft which produces shortening, and consequently its presence or absence has the same value and significance as that of the latter. As a matter of detail, eversion due to muscular relaxation and the unopposed action of the weight of the limb is often present in simple contusion as well as in fracture.

Two other signs upon which much reliance is placed in other fractures—crepitus and abnormal mobility—are commonly sought for in fracture of the neck, and, as they are frequently absent or unrecognizable, their absence is used as an argument against the existence of fracture. Concerning crepitus, it is sufficient to say that it is commonly not to be obtained by such manipulations as are justifiable in the examination, that it is not necessary to the diagnosis, that it should not be sought for, and that no inference should be drawn from its absence. Abnormal mobility is to be found only in the rotation of the limb, and is manifested when present either by the movement of the trochanter along the arc of a circle whose radius is less than normal, because of the shortening of the neck, or, in a more marked degree, by the rotation of the trochanter about the long axis of the shaft without change of place. I shall not spend any time upon the difficulties of the recognition of the first form; it is, in my opinion, a symptom of the study, not of the bedside; one owed more to deductive reasoning than to observation; it is sufficient for the present purpose to note that it can not exist without the association of a deformity that is in itself sufficient to remove the case from the class of doubtful ones.

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* "Fractures and Dislocations," p. 106.

Loss of ability to use or even to move the limb is so common that the absence of total loss, or, in other words, the preservation of the ability voluntarily to flex the thigh in some degree, to raise the knee from the bed, is by some deemed sufficient evidence of the non existence of fracture. Not only are the cases above quoted proof that this view is an exaggerated one, but abundant clinical evidence in opposition to it could be produced, and, not to spend further time upon this point, it may be categorically stated that even the patient's ability to walk is not an absolute proof of the non-existence of fracture, however improbable it may make it.

To sum it up, in any given case of injury to the hip the absence of shortening, eversion, crepitation, and abnormal mobility, and the preservation of function even to such an extent that the patient can still walk, do not constitute absolute proof of the non-existence of fracture of the neck of the femur; and, on the contrary, if there be present tenderness on pressure in front of and behind the neck, the probability of fracture is sufficient to justify the treatment of the case as such for at least two or three weeks, or until that tenderness shall have disappeared. Lack of depressibility in Scarpa's space, and possibly persistent spontaneous pain referred to the outer and upper portion of the thigh, are strongly confirmatory of this probability.

Practically, therefore, all such doubtful cases should be treated as though fracture were certainly present. The patient should be confined to the bed, upon his back, and with sufficient extension efficiently to oppose the contraction of the muscles that attach the limb to the trunk. And if the tenderness on pressure persists for more than three weeks, or long enough to confirm its significance as an evidence of fracture, this confinement to the bed should be maintained for five or six weeks, and the patient should not attempt to bear his weight upon the limb for two or three weeks more.

The second question to which I propose to ask your attention is one that is very closely connected with the question of diagnosis in doubtful cases of fracture, and its consideration will not now long detain us. It is, Can a traumatism of the hip that is not a fracture of the neck of the femur give rise to a destructive or absorptive process in the head and neck which will, within a few weeks or months, produce a permanent deformity and disability identical with, or at least closely resembling, those of fracture of the neck? The question is here strictly limited to cases in which the interval between the traumatism and the appearance of the deformity is a short one—say two or three months—for of course there can be no question of the existence of the affection variously known as osteo-arthritis, arthritis deformans, dry arthritis, and, at the hip, morbus coxæ senilis, of which the course is essentially chronic and slow, and which may or may not be preceded by a traumatism.

This affection, deforming arthritis of the hip, is of rather infrequent occurrence, is almost restricted to people more than forty or even fifty years of age, and is much more common in men than in women. It begins with stiffness at the hip, and pain sometimes closely resembling sciatica, and in the course of many months or even years produces marked changes in the form of the limb and great disability. The muscles of the thigh become shrunken, the limb is shortened and almost immovable, in a position usually of moderate flexion and adduction.

Most systematic writers upon the subject speak of a form in which the changes follow more rapidly upon a traumatism, and some even speak of the importance of recognizing this variety because of the danger of confounding it with the results of an unrecognized fracture of the neck of the femur, a statement which I believe should be exactly reversed—that is, the commoner error is to suppose an unrecognized fracture to be a case of arthritis deformans. But few cases have been reported in support of this view, and I think it may fairly be said that a half-dozen such published by George Gulliver* in 1836 have now done duty for more than fifty years, with but little additional support, as the basis for the opinion. Examination of his cases shows, I think, that in only one of them can this argument be fairly drawn; in some a long interval elapsed between the alleged causative traumatism and the appearance of the deformity, and in others the traumatism appears to have been a fracture. In the one case which may perhaps be accepted the patient was a weak-minded boy fifteen years old who fell into a pit and injured his hip; he complained of pain about the joint, but continued to work for a month, when he became so lame that he was obliged to desist; the pain then gradually diminished, and nine weeks after the accident he could stand upon the limb and walk with only so much of a limp as was occasioned by the shortening—half an inch. The trochanter was approximated to the median line, the motions at the joint were easy and natural, and no pain was caused by pressing the limb upward or inward, but forcible traction upon the limb was painful. He continued to suffer with nocturnal pains, and some months later the shortening had increased.

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* "Edinburgh Med. Jour.," vol. xlvi, p. 97.

Howard Marsh,* in his paragraph on this subject, refers to these cases, and further quotes the following one as a "typical example":

> A lady, fifty-two years old, fell upon her hip, and, although conscious of having received a severe bruise, went about for the next three days, though with gradually increasing pain and lameness, and was then compelled to remain in bed. The pain was severe, and the joint stiff and tender. Six weeks later Marsh found the limb an inch and a half shorter than its fellow and everted, the trochanter much less prominent than natural, and considerably above Nélaton's line; movement of the joint was very limited and painful and gave rise to distinct grating. He adds: "That this was a case of osteo-arthritis and not of fracture was, I consider, clearly proved by the fact that for two days after the accident the patient was able to go up and down stairs without help, and that the symptoms gradually increased in intensity, having at first been those simply of a severe bruise."

How insufficient this fact is to prove that the injury was not a fracture is shown by the cases cited in the first part of this article, and I quote this one only as the most plausible example within my knowledge of the alleged form of the affection. So far as I know, there is no autopsy of such a case on record, and the alleged cases, therefore, must be judged by the clinical evidence and by general pathological data and those derived from cases of fracture. The histories would support the diagnosis of fracture at least equally well, and indeed, I think, much more plausibly; and if this is conceded there appears to be hardly an iota of evidence to indicate that the changes were ever produced in this manner. There are no facts in the general pathology of bone to show that a blow, a contusion, unaccompanied by a gross lesion of the bone, can set this series of changes in motion, although, of course, it is perfectly well known that a gross lesion, such as a crush or fracture, can do so. The theory appears to have gained its present footing in the following manner: All writers upon arthritis deformans state that it sometimes follows and is induced by a slight traumatism, and the statement is habitually received and quoted without apparent attention to the question whether the relation may not be merely a coincidence and not causal. Then, when a case of doubtful character has occurred—one in which similar clinical features have followed promptly and without an intermediate period of well-being upon a traumatism—this unproved allegation of the existence of a causal traumatism in some of the undoubted cases is used as an argument to prove that the doubtful one belongs in the same class; and, finally, this questionable interpretation of several such cases is quoted and requoted as an established fact, is used as an incontrovertible argument in similar cases as they arise, and is made the basis for the categorical statement in systematic writings that such a class of cases does actually exist. The original defect in the proof, which persists and invalidates the argument in each successive case, is overlooked, and an interpretation which is possibly—yes, probably—incorrect, is accepted without further question and made the corner-stone of a new structure. During the last year I have seen two cases in which this diagnosis of interstitial absorption was made, and the history of a third was sent to me for an opinion. In the two patients I saw the accidents had occurred a year and a half and two years previously, and each was the overturning of a carriage. In one, a man sixty-one years old, there was three quarters of an inch shortening and marked eversion; flexion of the hip was free and painless, abduction and rotation restricted; the patient had suffered with much dull aching pain in the thigh for several months after the accident, but considered himself well, except for a slight limp, when he consulted me. He said the limb had been measured several times during the first few months by the physician who treated him, and no shortening had been found. Nevertheless, I felt confident the case was one of fracture. The second patient was a man forty-one years old, the shortening was more than an inch, the motions at the hip quite restricted, the muscles of the thigh and leg wasted, and there was still (two years after the accident) considerable dull pain in the limb. He, too, had been several times told that there was no shortening. While I think this also was probably a fracture, I must admit that the diagnosis is not beyond question.

> The patient whose history was reported to me was a woman, thirty-five years old, four months pregnant, who had fallen while walking. On examination, three hours later, no shortening or crepitus was found; the patient could flex and extend the limb at will and raise the heel from the bed; passive movements were free and painless; the only pain complained of was along the course of the anterior crural nerve, especially in the middle third of the thigh. She remained in bed three days, and then, to relieve the pain in the thigh, got up and walked about on crutches, which she continued to do daily, and occasionally at night. She was seen again sixty days later, "when the conditions were materially the same, except the advancing pregnancy." It is not stated that measurements were then made. Seven months after the accident, two months after delivery, she was examined by two physicians, who "found what they supposed to be true crepitus, and about one half inch shortening." In the third year after the accident, two examinations gave the one seven eighths, the other a half-inch shortening; no eversion; free motion at the hip, accompanied by a "rough rubbing sensation akin to crepitation," which was thought by one examiner to be produced under the tendon of the glutæus maximus, and atrophy of the muscles.

It will be noticed that there is no mention of measurements having been made between the day of the accident and seven months later, when shortening of half an inch was found, and that it is questionable whether this shortening increased during the next two years; certainly the evidence is not sufficient to exclude fracture.

Re-examination of the evidence heretofore advanced in support of the theory that such changes can be produced by a traumatism other than fracture or rupture of the ligaments is difficult and unsatisfactory, because of the incompleteness of the records and our ignorance of the observers, of the care taken on the examination, and, possibly, of their preconceived notions. And yet the whole question seems to need and to deserve fresh study. For that it is also necessary to have a new series of cases, carefully observed from beginning to end, and with full appreciation of the points in question.

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* "Diseases of Joints," p. 65.

CASES ILLUSTRATING THE DEPENDENCE OF
SOME FORMS OF EYE-INFLAMMATION UPON IRRITATIVE LESIONS OF THE DENTAL BRANCHES OF THE FIFTH NERVE.

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The following cases may possibly be of interest to some of your readers, as illustrating the dependence of some forms of eye inflammation upon irritative lesions situated in another portion of the area of distribution of the fifth nerve:

Case I.—Female, aged twenty-six, single, came under observation in January, 1887. She gave a history of a slight blow upon the left eye with an umbrella eight months previously, which seems to have produced no immediate serious effect, inasmuch as the next day she went fishing on a neighboring lake. On the following day the eye was red when she awoke, and she at once attributed this condition to the combined effect of the blow and the exposure to bright reflected light from the water. Since then the eye has never been completely well, although the condition has varied a good deal from time to time. Once it appeared to be nearly well, but she "went to work too soon" and the symptoms returned. During September and October, 1886, two small ulcers formed on the "outer side of the eye," which healed under the use of "Pond's extract." She was under the treatment of an oculist most of the time, whose diagnosis was iritis, and who had prescribed at first atropine and afterward eserine. The chief symptoms from which she suffered were photophobia, lacrymation, congestion of the eyeball, and occasional neuralgic pains in the temples. There was no evidence of syphilis, congenital or acquired.

January 17, 1887.—Right, normal. Left, considerable pink ciliary congestion; one posterior synechia, lower-inner; some haze of cornea at outer part (probably the result of the above-mentioned ulceration). Tension slightly subnormal. She was ordered potassic iodide and salicylate of sodium internally. Atropine three times daily, and a series of small blisters to the temple.

20th.—Congestion much diminished.

25th.—Commencing haze at upper-inner margin of cornea.

February 1st.—More congestion; haze at inner margin of cornea more definite.

9th.—Less congestion; a fresh patch of haze at the lower margin of the cornea. Has been suffering from headache for the last day or two.

Treatment had so far resulted in no permanent improvement; there had been a varying degree of congestion, but the subjective symptoms were as marked as when she first came to me.

She now drew my attention to a carious tooth on the right side, and a supernumerary molar on the left, and asked whether they might not have something to do with the eye trouble. I replied that they certainly might, and urged their removal. A week later this advice was repeated by another physician in my absence, and was followed. I did not see her again until March 15th. She then told me that the eye began to improve within two days after the extraction of the teeth, and had not become inflamed since, in spite of the discontinuance of all treatment. When I last saw her the eye was perfectly free from congestion, the pupil round, and its action normal. There was still some haze at the lower and inner margins of the cornea.

Case II.—Female, single, about twenty-two years of age, was first seen by me on January 28, 1887. Both eyes had been inflamed since November, 1886, the symptoms having been photophobia, pain, and lacrymation; there had been no discharge of matter. She had had many such attacks previously, usually during the winter.

I found considerable swelling of both upper lids; the palpebral conjunctivæ much congested and rough; numerous minute elevations at the margins of the corneæ, somewhat resembling phlyctænulæ, but more numerous and smaller than these usually are, and showing no tendency to break down; no ulceration of the cornea. There was intense photophobia, making examination difficult. I prescribed atropine and a shade, and a few days later a saturated solution of boric acid.

After a few weeks the left eye got well and has remained so since, and the right improved to some extent. This improvement of the right eye was only temporary, however. In a few days the congestion increased, the cornea became hazy in the upper and outer portion, and no change of treatment produced more than temporary improvement. In the light of Case I, I finally suggested that an examination of the teeth should be made by a dentist. This was done, and it was found that eight required filling, and that the third right upper molar was on the point of coming through. An incision was made into the gum covering this tooth, and followed by rapid and permanent improvement in the eye symptoms. The incision had to be repeated four or five times before the eruption of the tooth was complete. The eye was practically well one week after the first incision was made, and no recurrence has taken place up to the present time.

Case III.—A boy, fifteen years of age, came under observation on November 16, 1887. Two years ago he had an attack of inflammation of the eye similar to the present one. The present attack commenced about five weeks before I saw him, and had varied in severity from time to time, once having improved considerably with insufflation of calomel. Boric-acid lotion had been tried without benefit, and atropine had been used for a few days before I saw him, without definite improvement.

November 16th.—Right eye: moderate swelling of lids, considerable photophobia, and congestion of the conjunctiva, most marked near the lower and inner margin of the cornea, where the limbus of the conjunctiva is moderately swollen; there are, however, no definite phlyctænulæ. Adjoining the swollen patch there is superficial haze and roughening of the cornea, scarcely amounting to ulceration. No conjunctival discharge. Pupil fully dilated. Left eye normal.

On examining the teeth, the crown of a temporary tooth could be seen projecting inward between the first and second right upper molars, the gum around it being slightly congested. No pain in the tooth was complained of or admitted to be felt, but cleaning with the brush was stated to produce bleeding as a rule. The removal of the temporary tooth was advised, the local treatment, atropine, and a compress being continued. The tooth was removed on the same day.

17th.—Eye feels better; there is less congestion and photophobia.

18th.—Eye feels more comfortable than since commencement of inflammation.

19th.—Atropine and compress discontinued; to wear a shade.

23d (one week after tooth extraction).—Slight swelling of upper lid remains; no congestion or photophobia. The eye is normal, with the exception of slight haze of the lower and inner part of the cornea, and feels perfectly well. (March 10, 1888.—There has been no relapse.)

In the first case there was, while under my observation, no evidence of active iritis; the color, texture, and mobility of the iris were normal. The posterior synechia dated from the earlier period of the inflammation, if not indeed from a period anterior to this.

The three cases present several features in common:

1. The inflammation was most marked at the margin of the cornea.

2. The conjunctival affection was limited to congestion and slight swelling, there being no discharge of matter. It would thus seem probable that the conjunctival symptoms were simply secondary to the corneal.

3. The corneal affection was quite superficial, but extended over a considerable area. In the first case it much resembled that seen in inherited syphilis. In the two last cases there was a tendency to loss of epithelium. Thus it differed from the ordinary phlyctenular type of keratitis, which tends to be more definitely localized in one or more spots, and to be accompanied by well-marked ulceration and the development of blood-vessels on the cornea.

4. In all the cases there were variations in the condition from time to time, the symptoms never entirely disappearing (with the exception of those of the left eye in Case II), in spite of the long-continued use of the usual local and general treatment.

5. When the dental irritation was removed the eye-symptoms disappeared rapidly and completely in each case, and so far without relapse.

There can be little doubt that the removal of the dental irritation and the disappearance of the eye-symptoms stood to one another in the relation of cause and effect, and it may fairly be said that the dental irritation aggravated and prolonged the eye-inflammation, if it did not, as indeed seems very probable, constitute the original exciting cause of the trouble. If we admit that the condition of the teeth influenced the eye trouble in any way in these cases, it becomes evident that a dental lesion too slight or at any rate not of a nature to call attention by symptoms to itself may yet be sufficient to exert such an influence.

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NEPHRO-LITHOTOMY.*

By ANDREW J. McCOSH, M. D.,

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Nephro-lithotomy is a comparatively new operation. Scarcely eight years have elapsed since Morris, of London, first introduced this surgical procedure, and demonstrated successfully that the kidney could be incised and a calculus removed without damage to its future usefulness. Ten years ago it would have been considered foolhardy to cut into an apparently healthy kidney in order to remove a stone. The surgeon would have waited until Nature had destroyed the affected kidney by a suppurative process, or, had he been forced to interfere before an abscess had formed, the entire organ would have been extirpated. By resorting to nephro-lithotomy the surgeon is now enabled to preserve a kidney which otherwise would have been sacrificed, and, apart from this conservative advantage, the operation has the additional merit of being much less dangerous to the life of the patient than either nephrectomy or nephrotomy for calculous pyelitis.

Morris confined the term to operations for the extraction of a stone from a kidney the secreting substance of which had not become disorganized, and prior to the conversion of its pelvis into an abscess cavity. This limitation has been generally accepted

The following successful case of nephro-lithotomy is of additional interest on account of the malposition of the affected kidney:

M. B., an unmarried female, twenty-eight years of age, has complained since her childhood of pain in her right loin. During the past few years it has become much more severe, though she states that she can not remember a time when she has been entirely free from distress in that region. During the past eighteen months she has been quite unfitted for work on account of the exacerbations caused by any exertion or sudden movement. The pain, which she describes as being of a gnawing and throbbing nature, is felt not so much in the back, over the kidney, as in the right lumbar region and extending across the abdomen as far as the linea alba. Marked tenderness is present when pressure from any direction is made toward the kidney, which she reports has been the case for several years. Although never strong, her general health has not been materially affected until two years ago, since which time she has steadily lost flesh and strength, and suffers much from stomach derangements. She has never experienced any vesical disturbance, and her urine has always seemed to her clear and of natural appearance. The attitude of the patient is very marked, especially when she stands or walks. Her right loin is bent inward, and she projects the upper part of her body forward and toward the side on which she feels the pain. So decided is this peculiarity that, even when she is fully dressed, her friends constantly make remarks on her crooked figure. During the past few years she has spent the greater part of her time in going from doctor to dispensary, and from dispensaries to clinics, where she has been the subject of lectures on impacted gall-stone, chronic peritonitis, floating kidney, uterine disease, etc.

Some eighteen months ago I first saw the patient, and at that time, as on several later occasions, the examination of her urine failed to reveal the presence of any abnormal ingredients. In December last, as she was slowly but surely failing, and was in a state of constant suffering, I concluded that exploration of her kidney was justifiable, for I felt confident that the cause of her pain would be found in that organ. She eagerly consented to the operation, and entered my service in the Presbyterian Hospital. The most careful examination failed to reveal the presence of any tumor or enlargement in the lumbar region. Apparently the right kidney extended somewhat lower than the left, but its position and size could not be satisfactorily determined. At this time pain, tenderness on pressure, and lateral inclination of her body were the diagnostic symptoms. Frequency of micturition was not present. The urine was carefully examined daily by Dr. Marvin, and was found to contain many epithelial cells, but no pus, blood, albumin, or crystals of any kind. The quantity passed was small, it was of low specific gravity, and the amount of urea excreted in twenty-four hours was two hundred and thirty grains. On the ninth day of her stay in the hospital, without any unusual disturbance, she passed with her urine a long cast, probably of the ureter, which on examination was found to consist of mucus with pus-corpuscles imbedded in its meshes. From this time until the operation a considerable amount of pus was present in the urine, and there were also a few blood-corpuscles. It needed only these urinary signs to make the diagnosis of renal calculus comparatively certain.

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* Read before the Section in Surgery of the New York Academy of Medicine, March 21, 1888.

On January 9th the patient was etherized and placed on her belly and left side, with a hard cushion under the left loin. A vertical incision was made along the outer edge of the erector spinæ muscle from the last rib to the crest of the ilium. On coming down on the anterior layer of the lumbar fascia, directly in the line of the incision, a loop of small intestine was seen, rising and falling with the movements of respiration.* It was evident that two peritoneal surfaces were gliding over each other, and that the attachment of the peritonæum extended considerably nearer the spine than the external border of the quadratus lumborum muscle. Through this layer of fascia a hard body, supposed to be the kidney, was felt at the lower part of the wound. After all bleeding had been arrested, the structures on the spinal side of the incision were crowded backward by a large retractor, and, on cutting through the fascia, the circumrenal fat came into view in the inferior third of the wound. Instead of the kidney being in the upper part of the wound, its superior extremity was two inches and a half below the last rib, and my index finger, thrust down as far as possible inside the iliac crest, could barely reach its lower end. About half an inch below the upper edge of the crest of the ilium, evidently in the pelvis of the kidney, I could feel a hard body, and, on thrusting a fine needle against it, the diagnosis of renal calculus was confirmed. The kidney rose and fell fully half an inch with the movements of respiration. It was fixed in its abnormal position on the right sacro-iliac synchondrosis, and was not movable or floating. Finding it difficult to lift up the kidney and bring its pelvis with the calculus into view, I enlarged the wound by a transverse incision, three inches long, running outward along the upper margin of the iliac crest. The flap thus formed was held forward, and the kidney slightly loosened from its bed and raised up well into view. While it was held in this position, I cut into its pelvis, and extracted a rough mulberry calculus. The stone, which weighed 120 grains, was somewhat oblong in shape and covered with sharp mammillations, and from one corner was a projection, which probably had been inserted into the upper end of the ureter. A flow of urine followed its removal. Thrusting one finger into the opening made in the pelvis of the kidney, I thoroughly explored all the calices without finding another stone. The kidney was apparently healthy. A drainage-tube was fastened into the opening in the renal pelvis by a thin catgut suture passed through the circumrenal fat. The kidney was then allowed to sink back into its original position, carrying the tube with it. The upper half of the vertical and the anterior half of the transverse incision were closed with deep and superficial sutures, but the rest of the wound was left freely open, a drain passed down alongside the kidney, and iodoform gauze loosely packed around the tubes. My principal reason for not closing the wound was that the opening in the kidney was situated inside the pelvis, and I feared infiltration of urine within the iliac crest. A peat-bag was used as a dressing. This was changed every six hours during the first few days, afterward less frequently. The drainage-tube in the pelvis of the kidney was removed on the third day, and the other tube two days later. The patient had no unfavorable symptoms during convalescence. The temperature during the first five days varied between 99·5° and 100·5° F., and then fell to normal. There was no infiltration of urine at any time. For ten days, apparently, the whole amount of urine secreted by the right kidney escaped from the wound. By the eleventh day the amount began to diminish, and on the twelfth day the edges of the wound, which were covered with healthy granulations, were drawn together by secondary sutures of silver wire, and after this date no urine escaped from the opening in the loin. By the eighteenth day the wound throughout its entire extent was firmly united, and the patient was sitting up in bed. At the end of the fourth week she was discharged cured. I am indebted to Dr. Douglass, house-surgeon, for his careful notes of the case. Since leaving the hospital the patient has been entirely free from pain, and is rapidly regaining flesh and strength.

From this history it will be seen that the difficulty of diagnosis was caused by the entire absence of any urinary signs which would indicate disease of the kidney. As the patient had been an inmate for weeks at a time of more than one hospital, both in this city and in Philadelphia, if pus or blood had been present in the urine they would certainly have been discovered. When urinary signs are wanting, the diagnosis of renal calculus is always more or less uncertain. In the majority of cases, pus, blood, or crystals are found, but unless the kidney is disorganized they are very often present in small quantity, only to be appreciated by the microscope. Increased frequency of micturition is always an important sign, but this, like every other symptom of renal calculus, is variable. A large stone may be situated in the kidney for years without causing any serious symptoms or any important lesion. On the other hand, a minute calculus may cause the gravest disturbances and the complete destruction of the kidney. Probably pain, accompanied with tenderness on pressure, is the symptom most commonly observed. It is usually more or less constant and is increased by exertion, and attacks of renal colic are often experienced at some time during the course of the disease. As a rule, nothing can be learned from physical examination, though there have been cases where the stone has been felt on palpation through the abdominal wall. Other less diagnostic symptoms are lateral inclination of the patient toward the affected side, and gastric disturbances produced by the communication of the pneumogastric nerve with the renal plexus.

As I have mentioned, the patient's right kidney was situated several inches below its normal position. Instead of its upper end being at about the level of the eleventh rib, it was at least three inches below this point. Malpositions of one or other kidney are by no means a very rare occurrence. Morris* has collected 8,842 cases where the position of the kidney has been noted on autopsy, and in ten instances one or other kidney was misplaced. He concludes: "We may therefore expect, on the average, to find at least one out of every thousand bodies containing a misplaced kidney." Leaving out of consideration the horseshoe kidney, the most common displacement is to find the kidney situated over one or other sacro-iliac synchondrosis, and where found in this position the blood-supply is generally of abnormal origin, the arteries as a rule arising from either the bifurcation of the aorta or the common iliac. The left kidney is very much more commonly in a condition of displacement than the right, the proportion in twenty-one cases collected by Roberts * being sixteen to five. Deviation of the colon from its usual position and abnormal attachment of the peritonæum are very generally observed in these cases. There are on record cases where the kidney has been found deep in the pelvis, and in one patient it formed a serious impediment to the passage of the fœtal head in labor. †

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* The colon was not seen at any time during the operation.

* "Diseases of the Kidney," p. 17.

A word as to the incision I employed. The line of incision which probably is most commonly used is one below and parallel to the last rib. Had I resorted to this alone it would have been impossible to remove, and perhaps even to feel, the calculus, for it was situated five inches below this line. Of course, by afterward adding to this a vertical cut, more room would have been given, but even then the extraction of the stone would have been difficult. It was only by adding to the vertical incision a transverse one along the upper border of the iliac crest that sufficient room was given for thorough inspection of the kidney with its pelvis. It is important in these cases to bring the kidney well into view before cutting into it. Several accidents have been recorded from failure to carry out this precaution, as in a case of Lauenstein's,‡ where the colon was cut into instead of the pelvis of the kidney, that organ being situated high up beneath the ribs, where it was impossible to expose it even after resection of the twelfth rib.

The statement was first made by Morris that a wound in the secreting structure of the kidney healed more readily than one made in its pelvis, and he advocates the extraction of the stone through the cortical structure in all cases where it is feasible. Experience has confirmed his view as to rapidity of healing, but many cases are on record where the pelvis has been cut into and the incision has closed in a reasonable time, and even a wound in the ureter rarely fails to unite, as illustrated in a recent case of Godlee's,# where he removed a large stone obstructing this canal. The slower closure of the wound may not be a disadvantage, for if any gravel or detritus should be left behind in the kidney, its egress from the wound in the loin is easier and safer than its passage down the ureter into the bladder and out by the urethra. It has also been urged in favor of opening the pelvis that a large cicatrix in the secreting substance of the kidney might produce future changes in that organ, but there are no facts to support this theory.

Gross,‖ in December, 1886, published a collection of thirty-four cases of nephro-lithotomy with three deaths. From the reports of operations since that date I have the record of eighteen cases with three deaths. By adding these two collections together, I find that out of fifty-two cases there have been six deaths, which gives a mortality of 11·52 per cent. Compare with this the death-rate of nephrotomy for calculous pyelitis, reckoned by Gross as being 33 per cent., or that of lumbar nephrectomy, given by the same writer at 36·93 per cent.

Of exploratory operations on the kidney for suspected stone where none was found, Gross collected twenty-nine cases, all of which ended in recovery. Since his paper appeared I can find the record of five additional cases with two deaths, but these fatal cases ought scarcely to be classed in this category, as autopsy revealed in both the presence of renal calculus not discovered at the time of operation, even though in one of the patients a free incision of the kidney had been resorted to. I give these figures in order to show the comparative safety of exploratory operations on the kidney, for I could use no better argument for the purpose of urging a more frequent resort to this procedure in patients who give the symptoms of renal calculus. Should the kidney be found healthy, but little danger has been incurred by the patient, and, on the other hand, should a stone be discovered and extracted, his chances for recovery are much better than if the operation had been delayed until disorganization of the kidney had taken place.

No.	Operator.	Reference.	Result.
1	H. Morris .	"Trans. Clin. Soc.," London, 1887, p. 111.	Recovery. No urine escaped from wound after operat'n.
2	H. Morris .	"Trans. Clin. Soc.," London, 1887.	Death. Suppression of urine. Other kidney diseased.
3	Tiffany....	"Med. News," Ap. 16, '87.	Recovery.
4	Shepherd..	"Med. News," Apr. 23, 1887.	Death in 3½ mos. from septicæmia. Stone ℥ iv ʒ vij.
5	Lauenstein.	"Arch. kl. Chir.," Bd. 34, p. 222.	Recovery.
6	Agnew....	"Med. News," June 8, '87.	Recovery.
7	Pick......	"Lancet," Jan. 7, 1888.	Recovery. Death in 3 m. fr'm phthisis. Sinus nev'r closed.
8	Gardner...	"Austral. Med. Journ.," March 15, 1887.	Recovery.
9	T. Jones ..	"Med. Chronicle," Manchester, June 1, 1887.	Recovery.
10	Franks....	"Lancet," Dec. 25, 1886.	Recovery.
11	Agnew....	"Med. News," Feb. 4, '88.	Recovery.
12	Lange	"N. Y. Med. Jour.," Jan. 21, 1888.	Recovery.
13	Berkeley-Hill.	"Lancet," Jan. 21, 1888.	Recovery. Sinus never closed. In 11 mos. nephrectomy.
14	J. Israel...	"Deut. med. Wochenschr.," No. 1, 1888.	Death on 9th day. Calculus in other kidney.
15	Herczel (Czerny).	"Wien. med. Wochenschr.," p. 1662, 1887.	Recovery. Kidney pelvis sutured and successfully.
16	Herczel (Czerny).	" " "	Recovery. Kidney pelvis sutured, but unsuccessfully.
17	Von Bergmann.	"Berl. kl. Wochenschr.," 1887.	Recovery. Stone found in upper part of ureter.
18	McCosh...	"N. Y. Med. Jour."	Recovery.

Exploratory Operations.

No.	Operator.	Reference.	Result.
1	Chavasse..	"Lancet," Feb. 26, 1887.	Death. On autopsy, stone and abscess found.
2	Chavasse..	"Lancet," Feb. 26, 1887.	Death. On autopsy, stone found.
3	Lauenstein.	"Deut. med. Wochenschr.," p. 568, 1887.	Recovery. No stone found.
4	Marsh.....	"Trans. Clin. Soc.," London, 1887, p. 661.	Recovery. Kidney not found until subseq'nt laparot'my.
5	Hulke	"Lancet," 1887, p. 1064.	Recovery. No stone found, but amelioration of symptoms.

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* Roberts, "Urin. and Ren. Dis.," p. 587.

† "Guy's Hospital Reports," 1860, p. 407.

‡ "Deutsch. med. Wochensch.," 1887, p. 568.

"Practitioner," 1887, p. 250.

‖ "Medical News," December 18, 1886.

Correspondence.

LETTER FROM LONDON.

The New President of the College of Physicians.—Scarlet Fever and the Puerperal State.—The Appointment of a Royal Commission respecting the New Medical Degree.—A New Novel.

LONDON, *March 27, 1888.*

THE much-discussed question of who is to be the new president of the Royal College of Physicians has been settled at last by the election of Sir Andrew Clark, though not without a very keen contest. The mode of election is somewhat peculiar, inasmuch as no one is proposed, indeed no names are allowed to be mentioned, but the bowl goes round and each Fellow drops a slip of paper in with the name of the man he votes for on it. If at this first ballot any one Fellow obtains the votes of two thirds of those present he is *ipso facto* declared to be duly elected, but, if not, then a second ballot is taken between the two highest on the list, and this time a bare majority is all that is required. This year the second ballot lay between Sir Andrew Clark and Dr. Quain, though Dr. Wilks had a considerable amount of support in the first ballot. The result of the final voting was: Clark, 79; Quain, 71; a very narrow majority in so large a meeting.

The office is by no means a sinecure, and, although it is undoubtedly a great honor, it will mean for the new president a great deal of work and the giving up of a good many fees in private, for the president is expected to preside whenever a college lecture is given, to take part in the examinations for the membership which are held four times a year, to attend the meetings of the Censors' Board, and of the Council, as well as all the meetings of the Fellows. This will mean a great deal of time for so busy a man as the new president, but I have no doubt that he will ungrudgingly and loyally fulfill all the duties of his office. I suppose it is no disparagement to Sir Andrew Clark to say that had Sir William Gull's health not given way he would undoubtedly have secured the much-coveted honor. The curious custom prevails at the College on the occasion of the election of the president of giving every Fellow present a new half-crown. I do not know the origin of it, but it has the effect of securing a large attendance at the meeting, and, inasmuch as the half-crown is only given after the election, the electors all stay to the end of the meeting.

Sir William Jenner, the retiring president, has held office for seven years, a term rather longer than usual, there being a sort of unwritten law that five years shall be the period. Half a century ago, when they got a good man in the presidential chair they kept him there, and Sir Henry Holland served, I think, for twenty years, and his successor for fourteen, but it is not likely that those long periods of office will ever be repeated.

Dr. Boxall has lately made an interesting communication to the Obstetrical Society on the subject of scarlatina during pregnancy and the puerperal state. The paper was a very exhaustive one, and I can only here reproduce some of his conclusions, viz.: 1. That infection by the poison of scarlatina generally produces in the puerpera a disease which presents for the most part the usual symptoms of scarlatina and runs the ordinary course of the disease without the appearance of septic manifestations. 2. That the disease, in addition to the usual symptoms of scarlatina (to a certain extent modified), may occasionally present signs of septic poisoning; that, when present at the outset of the disease, pelvic inflammation and septicæmia may be regarded as accidental complications, but at a later stage such signs may be the expression of a septic process analogous to the secondary sore throat of ordinary scarlatina. 3. That in rare instances the disease may assume a masked form in which the ordinary signs of scarlatina are absent, or so slight and evanescent as to escape observation, and that in some such cases the only manifestation of the illness may be found in signs usually referred to septic poisoning.

The agitation for a new degree in medicine for London medical students is now in abeyance, as the Government have officially announced that a Royal Commission will be appointed to inquire into the whole subject. Had it not been for a handful of professional agitators and a few persons interested in bolstering up opposition claims, I believe that we might by this time have obtained the necessary charter for a new university somewhat on the lines proposed by the two colleges. As it is, we shall now have to wait an indefinite time. Sir William Jenner was exceedingly anxious to see this great work accomplished during his tenure of office as president at the College of Physicians, and it was this that induced him to remain on in office so long.

A new novel, entitled "The New Judgment of Paris," has lately made its appearance, and it is an open secret that it is written by a medical man—in fact, by your late London correspondent—so that your readers may be assured that in literary style at any rate it will take a very high place among the novels of modern times. It is not in any sense a medical story, the plot being laid in the fashionable world, and the hero an artist wrapped up in his work for its own sake; but a doctor, a medical student, and the lady superintendent of a hospital play an important part in the story, and a dispute between the medical authorities and the nursing staff of a hospital forms the subject of a well-written chapter. The book has already been favorably noticed in more than one quarter, and in my judgment deserves very high praise. It is published by the Messrs. Macmillan.

The Sense and Senses of Animals.—"Sir John Lubbock recently devoted a lecture to this subject in Queen Street Hall, Edinburgh," says the "Lancet," "and pointed out that the dog was generally admitted to be a loyal, true, and affectionate friend of man, but, when the nature of the animal was considered, our knowledge, he said, was very limited, and this arose from the fact that attempts were made to teach animals rather than to learn from them. It had occurred to him that some such method as that which was followed in the case of deaf-mutes might prove instructive if adapted to the case of dogs. He had tried with a black poodle belonging to himself, and had made the following experiments:

"'He had taken two pieces of card, one blank and the other with the word 'food' upon it. He had put the latter on a saucer containing some bread and milk, and the blank card he put on an empty saucer. The dog was not allowed to eat until it brought the proper card to him. This experiment was repeated over and over again, and in about ten days the dog began to distinguish the card with the letters on it from the plain card. It took a longer time to make the dog realize the difference between different words. In order to try to discover whether the dog could distinguish colors, he prepared six cards, marking two of them blue, two yellow, and two orange. He put one of each on the floor, and tried to get the dog to bring to him a card with the same color as one which he showed the dog in his hand. After trying this for three months, he found that his experiment in this direction was a failure.'

"Sir John Lubbock proceeded to state that he considered it to be doubtful whether ants could hear, but that it was possible both they and bees might hear sounds so shrill as to make no impressions on the human organ of hearing; and so perhaps with colors. The world might to insects be full of music we could not hear, colors which we could not see, and sensations which we could not feel."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, APRIL 14, 1888.

MIND CURE AND THE NINETEENTH CENTURY CLUB.

At a meeting of the Nineteenth Century Club held on the 27th of March, a paper on "Mind Cure" was read by one of its disciples, Miss Lydia Bell, and the subject was discussed by Dr. William A. Hammond, Mr. Purrington, and Dr. Louise Fiske-Bryson. Dr. Hammond made the liberal offer of a thousand dollars to any mind-curer who would produce four patients that, after receiving subcutaneous injections of certain drugs, did not show the natural effects of those drugs, and he offered to give another thousand dollars to a mind-cure hospital if any mind-curer would, from the examination of the back of a photograph, tell the character, the color of the hair, etc., of the person photographed. This the advocates of invisible and impalpable physic profess to believe can be done. Dr. Hammond cited numerous instances of the wonderful effect of mind upon body—an effect that always stops short of miracle.

Mr. Purrington considered the medico-legal aspect of mind cure. As the law does not and can not recognize the mental healers as physicians—they use neither drugs nor instruments—it simply has nothing whatever to do with them. They take their place quite naturally among masseurs, electricians, and the like, subject like them to laws that protect the life and welfare of others. Mr. Purrington read several clauses from a petition sent by mind-curers to the Legislature, in which their pretensions and "rights" were set forth with the entire absence of logic and sense that characterizes these enthusiasts.

Dr. Fiske-Bryson said in substance that, in order to discuss mind cure at all, it was essential to have some clear idea of what mind was. The best definition in literature, she said, was the one given by Mr. Raymond Perrin, in his "Religion of Philosophy"—that mind was that part of the organism which was capable of the greatest molecular changes. The union of mind and body was unaccountable, because it was an ultimate fact; the processes of the one were often a clew to those of the other. Mind and body were the obverse aspects of activity; there was nothing in perception that had not been first in the senses; mind acted upon body in its threefold aspect of intellect, emotion, and volition. As to mind cure, it was a theory that the finite could use the infinite, the material the immaterial, to further selfish ends; the motive, whether good or bad, did not affect the principle. Another assumption was that the phenomenal world was mere mirage, an illusion of the thinking self. "There nothing is but thinking makes it so," was the testimony of Hamlet, a man who had well-marked hallucinations. Mind cure, like the poor, was always with us; it masqueraded through the ages, in the guise of voudooism, the royal gift of healing, and witchcraft, finding its expression in charms and talismans among the gnostics and in terrific noises to frighten away the demons of sickness among the Chinese. It was almost the sole principle of the Indian medicine-man's practice. The mind cure of to-day was practical, experimental psychology twisted up into double bow-knots of mysticism and mistiness; it was a return from the simple truths that were now dawning upon mankind to the mysticism of the Platonists, the Rosicrucians, and the alchemists. It meant degeneration from the highest type of psychic experimentation to a low form of metaphysics; retrogression from the intellectual to the sensual, from order to disorder, from law to chaos. Pure psychology read the fate of the mental method of therapeutics as Daniel read the inscription to Babylon's last king. The intense egoism and ignorance of this superstition would inevitably bring about its downfall. Any system that utterly ignored the physical constitution of things must at times come into collision with fact. It had within itself the elements of dissolution; viewed through knowledge of cause and effect, it was evident that the mental method would have to "move on."

THE SWEDISH GYMNASTIC TREATMENT OF PROLAPSE OF THE UTERUS.

Twenty years ago a Swedish layman, Major Brandt, of Stockholm, published a little work entitled "Nouvelle méthode gymnastique et magnétique pour le traitement des maladies des organes du bassin et principalements des affections utérines." The book is to be found in the Library of the Surgeon-General's Office in Washington. Whatever may be thought of the major's theoretical views, and particularly of his ideas as to the "magnetic" element in the *modus operandi* of his method, it is interesting to note that his treatment of uterine prolapse has in a number of well-attested cases been attended with marked success. An interesting communication on the subject is published in the "Centralblatt für Gynäkologie" for March 31st, by Professor von Preuschen, of Greifswald, who says that, having spent some time in Stockholm observing the application of Brandt's method and the results following its use, he resolved to make further use of it in his own practice. This he has done, and in the article mentioned he gives the history of a case of complete procidentia in which he produced with it a cure that he thinks will prove permanent.

Brandt's treatment of prolapsus consists essentially in methodically lifting the uterus by manual force applied through the abdominal wall; in making the patient exert herself to the utmost in contracting the adductor muscles of her thighs; and in administering sharp taps with the edge of the hand upon the lumbar vertebræ and the sacrum. The patient lying in the lithotomy posture, an assistant introduces one finger into the vagina and presses the cervix backward so as to throw the uterus into an attitude of anteversion; the operator stands at the patient's side, his face toward her head, and presses both his hands, forcibly supinated, deep into the pelvis immediately above the pubic bones; still keeping his hands buried deep, he carries them slowly upward toward the epigastrium. By the aid of the assistant's co-operation, whose duty it is to follow the uterus with his finger in the vagina and maintain it in a state of anteversion, this lifts the organ as high as it can be made to go. The operator then removes his hands, and the uterus slowly falls back to its former position. The manipulation is repeated about three times on each occasion.

The exercise of the thighs consists in their forcible separation by the operator, whom the patient is to resist with all her power. This calls into play, according to von Preuschen, not only the femoral adductors, but also the muscles forming the floor of the pelvis, the so-called pelvic diaphragm, especially the levator ani; and it seems to be about the only way in which forcible voluntary contraction of that muscle can be brought about without at the same time calling the abdominal muscles into play to a degree that would prove injurious under the circumstances. Doubtless this exercise results in heightened tonicity of the levator ani, which tends not only to close the vagina, but also to produce a favorable change in the direction of a portion of that canal, so that the pelvic floor is decidedly strengthened as a support to the pelvic contents. As to the action of the taps upon the rump—a point that von Preuschen says hardly anything about—it may be partly by stimulation of motor nerves.

There seems to be nothing severe or objectionable in the judicious employment of such measures, and, even if they should fail in accomplishing the cure of a prolapsus, their effect would undoubtedly be of benefit to the patient's general health.

MINOR PARAGRAPHS

THE IDEAL OBSTETRICAL FORCEPS.

Dr. William Stephenson, professor of obstetrics in the University of Aberdeen, contributes an article to the "British Medical Journal," in which, after patriotically pointing out the faultiness of the geographical and historical information possessed by a certain author whom he quotes as saying: "It is not to the land of mountain and flood that we are to look for opportunities of acquiring experience in midwifery of this difficult kind; it must be in great centers of population," he unfolds his ideas of what a general-utility obstetrical forceps ought to be. It should be an instrument with which, barring exceptional features, delivery can be accomplished in any case in which extraction with the forceps is indicated. This, he says, can be done with Simpson's forceps slightly modified, mainly by prolonging the shanks. To this or any other good forceps hook-shaped traction rods can be attached, and thus axis-traction be made without the need of resorting to such special instruments as Tarnier's.

MUSCULAR RUPTURE IN HORSEMEN.

M. Charcot and M. Couillant, surgeons in the French army, have prepared a long paper on this subject, which is published in the "Revue de Chirurgie." From an excellent summary of their article, by Dr. Sprengel, of Dresden, published in the "Centralblatt für Chirurgie," it appears, as might be expected, that ruptures of muscles in cavalrymen are commonest among recruits, both because they have not been sufficiently trained in horsemanship to vault into the saddle and perform the other acts incident to riding with the necessary address, and because the muscles called into play are unaccustomed to such acts. Rupture of the rectus abdominis usually results from an attempt at climbing with the arms to supplement defective vaulting. At first only a few fibers may be torn, so that the soldier, not being wholly disabled, goes on riding, and complete rupture is apt to be the result. The accident is favored when acts are performed in which what is ordinarily the fixed end of a muscle becomes its movable end; for example, when the rectus femoris, instead of acting upon the patella, takes the knee as its fixed point and acts upon the pelvis. Usually the prognosis is good; the effusion of blood is seldom very great, even where, as in the case of the rectus abdominis, large arterial branches are necessarily torn, and muscular hæmatomas rarely suppurate, although the authors think that abscesses of Retzius's space are not infrequently of such origin.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 10, 1888:

DISEASES.	Week ending Apr. 3.		Week ending Apr. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	4	9	2
Scarlet fever	177	23	136	24
Cerebro-spinal meningitis	3	2	7	7
Measles	49	4	41	2
Diphtheria	119	36	146	33
Small-pox	28	4	25	5

The New York Post-graduate Medical School and Hospital.—The faculty gave their third annual dinner on Tuesday evening, the 10th inst., at the Hotel Brunswick.

The Medical Association of the District of Columbia.—At the annual meeting, held on Tuesday, the 3d inst., the following officers were elected for the ensuing year: President, Dr. W. W. Johnston; vice-presidents, Dr. W. W. Godding and Dr. C. W. Franzoni; secretary, Dr. G. C. Ober; treasurer, Dr. S. S. Adams.

A Prize for M. Pasteur.—The "Union médicale" states that the grand prize of the Turin Academy of Sciences, amounting to 12,000 francs, has been awarded to M. Pasteur.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the four weeks ending April 7, 1888:*

Armstrong, S. T., Passed Assistant Surgeon. Granted leave of absence for fourteen days. March 21, 1888.

Bratton, W. D., Passed Assistant Surgeon. Promoted and appointed Passed Assistant Surgeon from April 6, 1888. April 2, 1888.

Society Meetings for the Coming Week:

Monday, *April 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *April 17th:* Missouri State Medical Association (first day—Kansas City); New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburg, N. Y., Medical Association; Medical Society of Passaic County, N. J. (annual).

WEDNESDAY, *April 18th:* Medical Society of the State of California (San Francisco); Louisiana State Medical Society (Monroe); Medical Society of Mississippi (Jackson); Georgia Medical Society (first day—Rome); Missouri State Medical Association (second day); Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Windham, Conn., County Medical Society (annual—Plainfield); Middlesex, Mass., South District Medical Society (annual—Waltham); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society (Clinico-pathological).

THURSDAY, *April 19th:* Georgia Medical Society (second day); Missouri State Medical Association (third day); New York Academy of Medicine; Tolland, Conn., County Medical Society (annual); New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *April 20th:* Georgia Medical Society (third day); Chicago Gynæcological Society.

SATURDAY, *April 21st:* Georgia Medical Society (fourth day); Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

Albert G. Browning, M. D., of Providence, R. I., a well-known and successful physician, died on the 5th inst., of apoplexy. He was born in Woodstock, Conn., nearly fifty years ago. He had practiced in Providence for twenty-five years. Dr. Browning was an upright man, skillful in his profession, and respected by all who knew him.

Letters to the Editor.

ANOTHER REMARKABLE SURVIVAL OF A NEW-BORN CHILD.

20 WEST FORTY-FIFTH STREET, *April 3, 1888.*

To the Editor of the New York Medical Journal:

SIR: The remarkable case reported in a recent number of your Journal of the birth of a child at full term on a rapidly running railroad train, the child falling through the pipe of the water-closet on the track into the snow, and being found alive soon afterward and remaining alive, recalls to my mind a similar case (although not quite so severe or so graphic) which came under my observation while I was house physician to the Maternity Hospital at Würzburg, Bavaria, in 1869. A primipara, with her child, was brought into the Maternity under police escort with the following statement: While workmen were opening a sewer-drain in the yard of the residence of a well-known American merchant, whose wife was under von Scanzoni's treatment, they heard the screams of a child apparently proceeding from within the drain. On rapidly opening it, they found a full-grown new-born infant struggling in the filth, which they speedily rescued. Investigation being immediately made, in the water-closet on the *second* floor was found the cook of the family, an unmarried woman, collapsed on the floor. On being revived, she acknowledged being the mother of the child, and said that she was suddenly seized with an uncontrollable desire to go to stool, and when on the seat felt something rushing from her, and fainted.

The child bore signs of having passed rapidly down the drain-pipe (in those days modern water-closets were uncommon in Germany, and most residences had merely closets directly connected with the soil-pipe, but neither trapped nor supplied with a pan). It was badly scratched and bruised, but was otherwise well, and it thrived. It weighed about ten pounds.

The mother, having concealed her pregnancy, was accused of intentional infanticide, and, despite my testimony at the trial that in the agony of the moment she was probably unconscious of the escape of the child, and was not responsible for its birth in the closet, she was sentenced to four years' imprisonment.

The distance traversed by the child was certainly not less than thirty feet, and it is marvelous that the child was not killed by the fall or suffocated in the filth of the drain. While I have repeatedly seen living and healthy children brought into the Maternity who had been dropped on the hard pavement of the street while the mothers were on their way to the Maternity, I know of no instance in my experience where a child has survived such a fall as the one I describe.

PAUL F. MUNDÉ.

HOUR-GLASS CONTRACTION OF THE UTERUS.

PERTH AMBOY, N. J., *March 27, 1888.*

To the Editor of the New York Medical Journal:

SIR: The infrequent occurrence of hour-glass contraction of the uterus is undoubtedly the main factor in accounting for the sparse literature on this important abnormal condition, and gives interest to a case reported in the "New York Medical Journal" of the 24th of March.

The doctor was evidently "prudent and careful" in applying his hand to the abdomen after the birth of the child, with the view of ascertaining the condition of the uterus, yet he failed to act in accordance with the *recognized* evidence which the examination elicited. The existence of persistent pain and hæmorrhage showed perverted action in the womb, and furnished aid in the diagnosis which an internal examination would have rendered entirely conclusive, and led to the adoption of obvious measures—dilatation of the stricture and removal of the placenta and membranes.

Without maintaining that any injury arose from the administration of the full dose of ergot which was prescribed, it was certainly contra-indicated by the fact that the uterus was already in a condition analogous to that produced by this drug, and its influence would naturally aggravate the pain and the condition on which it depended. The location of the placenta in the vagina prior to the administration of the anæsthetic and its existence in the uterus afterward, when it was found detached and adhering to the membranes in the upper segment of the womb, I am unable to reconcile. And, with both segments of the uterus apparently contracted, I am also perplexed in the assumption of a hypothetical condition of the organ that would allow "a deluge of blood" on the removal of the placenta. The after-birth and secundines having been removed, regular contractions would naturally ensue, or could easily be induced, and the hæmorrhage would cease at once. The case recalls one of a similar character that came under my observation a number of years since in the practice of a brother practitioner. Prior to my arrival, ice had been applied to the abdomen for several hours, with the object of arresting the profuse hæmorrhage which ensued after the birth of the child, but it failed to produce the desired result. This agent is similar in its action to the secale cornutum, and would be as objectionable as that remedy.

On introducing the hand into the uterus and passing it along the cord to the location of the contraction, my first impression was that of a ruptured womb, but I soon found the placenta detained in the upper segment by the stricture. I immediately proceeded to dilate the contracted portion, and after continuous effort for some time succeeded in overcoming the stricture. As soon as I grasped the placenta in my hand, both were forcibly ejected by the violent uterine contractions.

The endometritis to which the doctor referred was very possibly connected with subinvolution of the uterus, growing out of the previous abortions, and acted as a predisposing cause in the development of the abnormal condition.

L. S. Blackwell.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of March 14, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Certain Obscure Cases of Fracture of the Neck of the Femur.—A paper with this title was read by the President. [See page 401.]

Dr. Sands thought that the reader had expressed the view entertained by almost every practical surgeon who had questioned the common teaching that interstitial absorption of bone might occur in the hip as the result of injury, but nowhere else. Many cases of fracture of the hip were very obscure. It was important that this whole question should be studied anew with the light of fresh anatomical evidence. He had never seen a case of interstitial absorption following traumatism, and was inclined to believe that the condition which was supposed to be this was probably fracture with obscure symptoms.

Dr. McBurney agreed with the reader concerning the great difficulty of deciding as to the existence of fracture in many cases of injury to the hip. He had seen several cases in which it was not possible to make a positive diagnosis until several weeks had elapsed. An important symptom of fracture, which had not been mentioned by the reader, was the difficulty which the surgeon experienced in *inverting* the limb. When this symptom persisted day after day it would be found to be due to fracture. In the case of a contusion there might at first be great disability, but after a week or two it would be possible to invert the limb as on the sound side. The speaker had had no experience with arthritis deformans following injuries to the hip, and agreed with the reader that it could hardly result from any injury less severe than a fracture.

Dr. Rushmore said that in two or three obscure cases of suspected fracture of the neck of the femur he had been assisted in making a diagnosis by lifting the trochanter while the patient was under ether, and noting the effect on the foot. On the unaffected side the toes would be found to rotate through a large arc, while on the affected side they would simply be slightly shaken from side to side.

Dr. Weir said that he would like to amend the reader's treatment by suggesting that apparatus should not be applied too early in the case of elderly patients. He would make them as comfortable as possible by means of pillows and sand-bags. In such patients the symptoms might be aggravated by applying apparatus and immobilizing them too rigidly in bed.

The President said that in his experience extension with a light weight (from five to ten pounds) was most comfortable for the patient.

Dr. Weir said that he could recall two cases in which a zealous house-surgeon had applied such a mild extension apparatus at once with bad results, sloughing being produced in one instance. He had found that it was not well in the cases of aged persons to confine the patient too closely.

Dr. Sands said that his experience had been different from that of Dr. Weir. The books stated that it was better not to treat these cases too rigorously for fear of impairing the general health. He was accustomed to treat every case of doubtful injury to the hip as if it were a fracture, by immobilizing the joint at once. He had had many cases of fracture of the neck of the femur in which recovery had been perfect. Some of his best results had been obtained by the use of plaster of Paris; water-glass splints had also proved useful. He could recall four patients (one a lady eighty years of age) who had been treated for fracture in this region and who afterward walked about without limping. Even when patients did not recover without subsequent lameness they were made more comfortable if the limb was immobilized.

In reply to a question by Dr. Wyeth, the speaker said that in his experience the subsequent motion of the limb was not impaired by immobilization.

Dr. Wyeth said that he had been rather afraid of using plaster of Paris lest a stiff limb should be the result; he generally employed sand-bags.

Dr. Weir explained that he only intended to convey the impression that he would not begin treatment by means of apparatus at the very outset, and especially in doubtful cases. There were cases, however, in which the pain was so great that it was possible to employ with benefit extension at once in order to relieve it. He had merely wished to call attention to the advisability of being careful about treating elderly patients too rigidly at first. He had also frequently met with an unexpectedly good result in the treatment of unmistakable fractures of the cervix, and in these too where it was allowable to adopt the undue refinement of calling it an intracapsular fracture, which term could safely be applied to nearly all the fractures of the neck of the femur.

Dr. Briddon said that twenty-five or thirty years ago there had been a great discussion concerning intra- and extra-capsular fracture of the neck of the femur. His attention had been drawn to this controversy, and he had tried in every case to make an exact diagnosis, but he believed that in his excessive zeal to attain this he had done harm by converting impacted into unimpacted fractures. Now his practice was to avoid a thorough examination of the injured limb. He always instructed his house-staff that, if a patient had pain and disability following an injury to the hip, they should *not* endeavor to obtain crepitus. Since adopting this rule he had met with better results in these cases. He would go so far as to refuse to treat a case of injury of the hip unless he was allowed to treat it as a fracture. Gurdon Buck and Hamilton had objected to fixation of the limb in aged people, but the speaker thought that in most instances this was most comfortable for the patient; immobilization secured subsequent normal movement. He kept the patient under treatment for three or four months. He especially objected to the practice of etherizing a patient in order to make an accurate diagnosis, since it was apt to result in harm. He had seen cases of impacted fracture in which no shortening could be detected at the time of the injury, but after the patient had walked the impaction was broken up, and shortening took place.

Dr. Wyeth cited a case in which a lady fell and injured her hip, and then walked home; ten days after, shortening was found on the affected side.

Dr. McBurney thought that while extension was useful in proper cases, those should be clearly recognized in which simply rest was aimed at; in the latter the weight ought to be very light—only sufficient to counteract muscular contraction, any not to produce actual extension. In some cases a heavy weight might do great harm. The weight ought to be graduated according to the amount of muscular contraction.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of March 14, 1888.

The Vice President. Dr. W. W. Keen, in the Chair.

On the Importance of Primary Suture of Divided Nerves.—Dr. Charles B. Nancrede read a paper on this subject. Although, he said, he had a most profound faith in the vis medicatrix naturæ, he still thought that Dame Nature should always have fair play in her battle with injury or disease, and this she certainly failed to receive at the hands of too many practitioners. In a paper published some fifteen years before, he had contended that if, with such vascular structures as those of the face, which certainly would unite sooner or later in some sort of fashion, it was customary to resort to suture merely for cosmetic effects, one was all the more bound to do so for such non-vascular structures as tendons, which, if they fail to heal well, much more if no union was secured, must entail disability or total uselessness of a member. Nowadays a surgeon who should fail to suture a divided tendon would be considered derelict in his duties. In like manner, he trusted that in the near future the general practitioner would be so impressed with its importance that he would consider his duty unfulfilled until he, or some surgeon summoned by him, had sutured any divided nerve.

It was needless to dilate upon the evils consequent upon the abolition of function of an important nerve; cases must have occurred in the practice of most of those present where division of even such small trunks as digital nerves had resulted in troublesome ulcerations, causalgias, etc. Doubtless the indifference of practitioners to wounds of nerves, or, more strictly speaking, their inclination to "leave them to Nature," had arisen from two causes—viz., (1) the fear that suturing might in some way determine tetanus, and (2) the well-known fact that nerves divided or even excised with the avowed intention of abrogating their function, too commonly reunited. The first cause should not deter one, as it was now known that a suture *per se* could never originate tetanus; while as to the second objection, certain facts which he would submit warranted the conclusion that traumatic divisions of nerves, unless effected by a clean cut—or perhaps ball wounds—involving solely the nerve and little, if any, of the contiguous structures, differed so materially from those purposely effected by the surgeon's knife that conclusions derived from the result of neurectomies could not safely be applied to accidental divisions of nerves. Besides, granting that reunion would occur without suturing, as a stitch could do no harm, why not use one, since it would at least conduce to a more rapid resumption of function? While primary union of nerves with immediate resumption of function—*i. e.*, in a week or ten days—was a surgical rarity, yet it did at times occur, and would doubtless be of more frequent occurrence if suture were the rule and not the exception.

His aim in this brief note was merely to call attention to the *duty* of suturing divided nerves as a routine practice, just as one would tie arteries, and to describe a simple, effective method of carrying out the indication. A critical examination of the histories of nearly all exsections of nerves where reproduction had occurred would show that they had been removed either from a bony canal or from an intermuscular space in which they normally lay, *with the minimum* of injury to the surrounding tissues. Moreover, even when their ends had been turned back and sutured in position or even buried in the surrounding tissues, they had been so secured in the same intermuscular space which the nerve normally traversed. In other words, the bony canals, and the intermuscular spaces likewise, acted as molds which directed the course of the reparative material from the proximal to the distal end of the severed nerve. In extensive wounds, however, this condition did not obtain. Intermuscular spaces were dislocated, and large masses of scar tissue were formed, so that, instead of the new nerve-tissue being *compelled* to grow in only one, and that the right direction, it had too often an insuperable barrier interposed, and union failed.

In the case of a patient now shown, the proximal ends of the ulnar and median nerves had been directed at right angles to their intermuscular space, and would infallibly have been fixed between the ends of the torn muscles in a dense mass of scar tissue, resulting in permanent loss of power of the member. The brachial artery had also been torn through, leaving only a bridge of muscle and skin through which collateral circulation could be carried on. The deficient blood-supply possibly explained the failure of the recovery of power in the interossei muscles, although other of the intrinsic muscles of the hand supplied by the ulnar nerve contracted well. In the seventh month after suture—*i. e.*, the usual period required for the degeneration and regeneration of a nerve—first sensation, and then motion had returned, until now, although the functions of the member were not perfect, the boy could earn his living, and do nearly all that could be effected by a normal hand and forearm.

Further citation of cases seemed hardly necessary, and such good results as he had shown had been reported frequently.

Finally, how should the sutures be passed and what should their material be? Fine aseptic catgut passed by means of an ordinary sewing needle was to be preferred, but fine aseptic silk might be used, and he himself had resorted to this in an emergency. Should the nerve be *very* much lacerated and frayed out, it might, perhaps, sometimes be proper to cut off a portion to gain a clean surface, but this was rarely desirable. The needle should be passed from below upward through the proximal end of the nerve at one border, across, and then from above downward near the opposite border, entering from an eighth to a quarter of an inch from the cut end, according to the size of the nerve. The needle must now be passed from below upward through the distal portion of the nerve at the border corresponding to the last passage of the needle through the proximal end, carried across, and made to pierce the nerve from above downward, when the suture would be found to correspond to the free end of the thread in the proximal piece of nerve.

Gentle traction with an appropriate position of the member would, by the tying of one knot, accurately approximate the nerve ends; in a word, by this simple method all the advantages of the two separate sutures commonly recommended were obtained with a far greater degree of security. The strictest asepsis should be secured, which was easy enough provided the wounded part, the surgeon's hands, and his instruments were strictly cleansed, and the wound was freely irrigated with the bichloride and tartaric-acid solution. With an uncontaminated wound, it was the surgeon's own fault if there was suppuration, and even with the ordinary run of accidental wounds, if he would thoroughly scrub his hands with a nail-brush and hot water, and likewise so treat the parts surrounding the wound, and pour boiling water over his instruments, without any further antisepsis, in most cases healing without suppuration could be secured, while the omission of these details would mar results with gallons of mercuric solution flowing over the wound.

Dr. H. R. Wharton had seen one or two cases of primary nerve-suture, though none in which the injuries had been so extensive as in the case shown. The results in these cases had been good. There was another point to be considered. Should one attempt secondary suture of the nerves when this had been omitted in the first place? The speaker was very decidedly of the opinion that this procedure should be adopted, for a number of such cases had been reported in which the results had been at least good enough to make him feel that secondary suture should be attempted when there was any probability of restoration of the use of the injured part. He thoroughly agreed with Dr. Nancrede as to the great importance of the subject.

Dr. John B. Roberts said that the only case of nerve-suture he remembered was one in which the work had very properly been done by the resident immediately on the admission of the patient. It was a rather extensive incised wound of the leg, involving, he thought, the musculo-cutaneous and anterior tibial nerves. The muscles and nerves were sutured and dressed antiseptically, and the results were good, though he had not followed the patient after discharge so as to make an accurate report as to sensation. Dr. Nancrede had incidentally touched upon a point of great importance, that of teno-suture. It had been the speaker's misfortune to meet with quite a number of cases in which this had been neglected by the attendant called at the time of the accident. One of these recently seen had been that of a man wounded in the forearm just above the wrist, and in the ring finger. There was loss of flexion of the finger, but it was hard to tell which of the wounds to reopen in order to come upon and suture the divided tendon. The family physician believed it to be the one at the wrist; but, after cutting down, the speaker had found the tendon there flaccid and intact. He then opened the finger wound and found the tendon retracted into the sheath. He sutured, but did not get a good result, probably from the extent of dissection necessary to get at the tendon in the sheath, and the great mass of cicatricial tissue. However, he never hesitated to reopen healed or partially healed wounds to suture tendons when this very important measure had been neglected. He had been glad to hear Dr. Nancrede say that with cleanliness of person and of instruments asepsis could be secured without chemical solutions. This was in marked contrast to the idea that the employment of solutions rendered care as to cleanliness unnecessary.

Dr. J. William White did not know whether Dr. Nancrede had spoken of the resection of the crushed and bruised ends of the nerves. The general principles of nerve-suture were admitted by all surgeons, but the question of resecting lacerated or contused ends before suturing, or of allowing them to remain, was one that should be carefully considered in each case. On the one hand, by resection of any considerable portion the longitudinal tension was increased, and greater strain made on the sutures; on the other, the risk was run of including in the stitches tissue too much damaged to recover itself. There was some difference of opinion as to the particular suture to be employed. He should think that the one proposed by Dr. Nancrede, as shown in a diagram, would be open to objection if, as was there apparently represented, it interposed a foreign substance, the catgut thread, between the ends of the nerve; this, if not absorbed, as was sometimes the case even with the best catgut, was likely to be a constant source of irritation, and to prevent union. The speaker preferred and employed a suture passing quite through the nerve above and below the point of union. Evidence, either clinical, or pathological, or experimental, as to the relative advantages of different sutures was desirable, but he did not know of any, and had not understood Dr. Nancrede to say that there was such evidence.

The Chairman spoke briefly of two cases that had occurred in his own experience in connection with the subject under discussion. The first case was one of primary nerve-suture in a boy two years of age, with perfect recovery of motion and sensation. It occurred ten years ago. The child, carrying a glass bottle, fell, and a fragment of glass divided the ulnar nerve and artery about an inch and a half above the wrist. The mother made compression with her thumb until the speaker arrived, very soon after the accident. After ligaturing the artery, he examined the nerve and found that it had been divided. He had with him only a pocket-case containing coarse white silk and an ordinary needle. Not wishing to leave the coarse silk in the wound, particularly not in the nerve-tissues, he debated as to the method of suture, and devised one which proved eminently satisfactory. Drawing the ends together closely with forceps, he passed a surgical pin obliquely through the two divisions, threw a loop of silk around the point of the pin (as in Simpson's method of acupressure), drew out the thread, and passed it around the head of the pin, where it was secured. At the end of forty-eight hours the pin was removed. The thread was thus loosened and removed. Perfect union of the wound took place in a few days. There was no wasting of muscles, and motion was present after twenty-four hours. While the age of the child prevented exact observation as to the time at which sensation returned, at the end of forty-eight hours there was an exclamation of pain on pricking the little finger with a pin. About a year ago the boy's father had told him that his son had perfect use of the hand and fingers.

The second case was one of extensive teno-suture, with quick union. It showed the value of even a brief suture of tendons. A man twenty-five years of age was admitted into St. Mary's Hospital with complete severance of all the tendons of the forearm and of the sheath above the wrist. The resident sewed each tendon carefully. He had only Kocher catgut, which did not remain more than from three to five days, and then closed the external wound and placed the hand in flexion on a splint. The man left without permission after a few days, and, it seemed, removed the splint and tore out the sutures in the skin. He returned subsequently with a gaping wound in the forearm, but, on testing the fingers separately, each finger and each joint was found to have perfect motion, showing that even this temporary apposition of the divided tendons had had a perfect result. The speaker would prefer for the purpose, however, either very fine silk or, better, the ordinary chromicized catgut.

Dr. Nancrede said that Dr. White had misunderstood him. There had been nothing between the divided ends of the nerve. If he would examine the rough model which was now passed around he would see that the nerve was securely and accurately coaptated by the suture. He had no distinct recollection of resecting the injured ends in this case—in fact, he was nearly certain that he had not. In some cases, he had said, it *might* be desirable, but he was dubious about it. In two other cases that he recalled he remembered that he had not made any attempt of the kind, but had brought the ends together as best he could. Referring to the incidental discussion, he was glad to hear that so many of the members always sutured tendons. He made it a rule to suture nerves and tendons in every case, and generally obtained fair results.

Ectopia Lentis.—A boy with this deformity was shown by Dr. Howard F. Hansell.

The Early Recognition of Exophthalmic Goitre was the subject of a paper by Dr. J. Madison Taylor, in which, he said, he would not attempt to do more than call attention to the importance of early recognizing a disorder which often eluded one, to point out certain features which should enable one to do so, and to offer in illustration, very briefly, the salient points in half a score of cases.

Exophthalmic goître, or Graves's disease, was not a rare malady. At first it was merely a disorder, but frequently became a serious disease, and was known to cause death. Oftener it unfitted its victim for active usefulness, or at least limited this and sadly disfigured him. Like certain other ailments, the outcome of irregular nervous discharge, what in its incipiency was a very manageable complaint produced in time a disastrous effect upon the tissues, and formed a practically unconquerable disease. Dr. Jonathan Hutchinson was quoted as saying: "Graves's disease appears to me to be of the utmost importance, not only on its own account, but as what we might call a type malady. It is the most definite and striking example of which we know of a severe and protracted malady which, despite its severity and persistence, yet has a natural tendency to recovery."

In reviewing a large number of cases in the search for a complete symptomatic picture, the author had found that the most constant early feature was sudden and marked evidence of loss of nervous equilibrium. The vaso-motor nerves seemed quite unstrung. Hence arose flushing, sweating, and other skin changes, diarrhœa, and transient albuminuria. If at this time a careful watch was kept, he thought we should find irregularities in the action of the pupil. The skin usually lost its healthy hue, grew sallow or dark, and became greasy to the sight and touch. This oily look had been present in most of the cases he had seen, though he had not seen it mentioned elsewhere. Begbie had recounted one case of pigmentation, or bronzing, of the skin; Reynaud had called attention to vitiligo; and Edward Squire to a discoloration in an isolated instance. The oleaginous appearance seemed to the author quite constant on the face and body. It grew less when the use of salt sponging and belladonna formed part of the treatment. Gowers called attention to muscular tremor. He had seen this rarely. In two cases there had been a tremulousness in the voice, which he had ascribed to nervousness; yet it was constant. The emotions often became so overwrought that various mental peculiarities excited apprehension; or a wiser person might regard the case as one of pronounced hysteria, and, indeed, all through the malady hysteria remained present, more or less, leaving one not seldom in grave doubt. Frequently delusions occurred, and these so closely in unison with the ordinary habits and thoughts of the individual as to render them most difficult of detection. Dr. Hilton Fagge had warned us to be on the lookout for "slight cases in which one or two of the cardinal symptoms may be absent throughout." Trousseau had also insisted on this point. Von Graefe had expressed the opinion that among women it was not rare to find instances of this malady where the only symptoms were disordered action of the heart, not accompanied by valvular trouble or hypertrophy, nor the faulty action of the lid as described by him. Heart disturbance most often led the sufferer first to seek medical advice. The pulse was always quick and irritable, usually intermittent. The heart-beats, as a rule, bore surprising relationships to the pulse. Overaction of the heart was well known to be a frequent feature of anæmia and chlorosis. Begbie thought it a powerful factor in causing Graves's disease. Ross regarded the anæmia which was usually present as rather a result.

Throughout the whole vascular system there was a manifest lack of *tone*. So constant was this that it might yet be found competent to explain the causation of the disorder. Certainly the graver features bore a causal relation to this state. The vaso-motor nerves seemed all out of balance; nor could it be confined to one part, though the cervical sympathetic was most prominently involved. There were cases where limited areas not governed by the upper ganglia showed derangement, as in that of a woman now under the care of Dr. E. T. Bruen, where one side sweat from shoulder to toe, and the opposite eye was prominent. Arterial tension varied rapidly and unaccountably; hence the oft-complained-of noises in the head, amounting at times to terrific roarings. This might explain the maniacal attacks, as well as blood-spitting, thirst, and transient albuminuria. The heart itself was rarely diseased. The overaction in time brought on hypertrophy; more commonly, dilatation. It also suffered from the general malnutrition which was noticeable throughout the circulatory system. The small amount of structural damage which this viscus sustained was a matter for remark, however, when the profound functional disturbance was considered. Systolic bruits were commonly heard, even over the auricles and the great vessels of the neck. Dyspnœa was distressing. This at times, even early in the history, alarmed one who felt naught else to complain of.

The thyreoid enlargement was apt to appear long before the eyes became prominent, but readily escaped attention. It might happen that a sense of constriction was felt when swallowing, especially in men who wore tightly fitting collars. Both lobes were, as a rule, enlarged; but, if one only, it was generally the right. When recovery took place, this badge remained to chronicle the victory.

The eye prominence was late to appear, as a rule, and it would seem to mark the height of the disorder. Before the exophthalmia, there might generally be noted the sign asserted by von Graefe to be pathognomonic, a belated action of the lid in following a downward movement of the ball. Sometimes the lower lid was tardy in following an upward glance. This obtrusion of the eyeball was the most picturesque feature, but happily it was not constant, and was often very late. It was of both eyes, mostly, but if of one only, again the right suffered. Sight was seldom affected, except where the outstanding, unprotected cornea suffered hurt or irritation; then opacities might result. If errors of accommodation existed, their correction, in his opinion, greatly aided in reducing the exophthalmia. Fundus lesions were not characteristic, though pulsation of the retinal vessels might serve to confirm suspicions.

Knee-jerks were rarely abnormal; often in slight excess.

Electrical examination had been very recently shown by Charcot, confirmed by Vigouroux and Norris Wolfenden, to aid greatly in foretelling the onset of this trouble, the bodily resistance being greatly lessened most peculiarly in this disease. This might prove a valuable aid in diagnosis.

After giving notes of the histories of eight cases, the author said that he hoped to discuss the treatment, on which he had some decided opinions, on another occasion. It consisted mainly of rest, judicious feeding, and the use of tonics and carefully selected sedative measures. Competent glasses, too, were essential; at times sharp counter-irritation, especially diuretic remedies and attention to the emunctories. Galvanism, too, had immense value in some instances, but required judgment in the selection of cases. In brief, whatever measures tended to repair the tone of the vascular system and allay nervous excitability would best bring about gratifying results.

Dr. S. D. Risley would like to ask Dr. Taylor whether there was any indication from which the development of exophthalmia could be expected in cases in which it had not yet appeared.

Dr. J. B. Roberts believed that the great ocular deformity, which was so unpleasant to the patient and attracted so much attention, could be remedied by a very simple operation: merely putting a stitch at the outer canthus, after freshening the edges of the lids, to diminish the optic commissure after the case had made such progress that it was reasonably certain there was to be no further diminution of the prominence of the eyeballs. The patient could be made more comfortable and less conspicuous.

Dr. **Edward Jackson** thought the procedure suggested by Dr. Roberts might be resorted to for other than cosmetic reasons. He had recently seen a case of this disease, with very great exophthalmia, in which one eye had been lost from sloughing of the cornea due to exposure; and had afterward learned that the second eye had been lost in the same way. Such an accident might be prevented by narrowing the fissure of the lids.

Dr. **A. V. Meigs** knew of one person who had completely recovered from this disease, a woman who had a very severe attack many years ago, under the care of his father. The prominence of the eyes, which had been very great, was now hardly noticeable, and yet no operation was ever done. He did not think that much would be gained by sewing up the canthus, for while the disease was in its acute stage it was hardly likely the operation would afford much relief, and afterward, if the patient recovered at all, the difficulty cured itself. He thought he knew the case that Dr. Roberts had had in mind when he spoke, and Dr. de Schweinitz, who had seen the woman in question, would probably agree with him that nothing would be gained by an operation. One thing he had learned of recent years, and it was that it was not necessary in all cases to put the patient in bed. He could mention three or four cases that he had successfully treated with tonics and proper regimen, without its becoming necessary to order rest in bed; the cases, to be sure, had not been severe. Dr. Taylor had spoken of the early recognition of the disease. For the speaker's own part, he did not see how a positive diagnosis could be made until there were at least two of the features of the disease present, namely, the cardiac palpitation and some thyreoid enlargement: the prominence of the eyes occasionally did not manifest itself, but a diagnosis could undoubtedly be made in its absence.

Dr. **G. E. de Schweinitz** had examined the patient that Dr. Meigs had referred to, and had seen nothing to be gained by surgery. The eyes had at first been very prominent, but they were then receding, and now the normal relation of lids to eyeballs was restored. Inasmuch as there was considerable myopia, and hence the not uncommon prominence of myopic eyes, to begin with, they would always be more or less conspicuous.

Dr. **S. Solis-Cohen** thought that he recognized in Dr. Taylor's first case that of a patient whom he had seen, but in whom he had not recognized this disease. She was treated at the Jefferson Hospital some three years ago for anæmia, and was apparently cured. A year ago she returned with the history of "fits" spoken of by Dr. Taylor, and was irregular in attendance and unreliable in statement; the hysterical element, so noticeable, probably prevented the careful investigation the case should have received. He considered it the more remarkable that thyreoid enlargement should have escaped notice at the clinic in this case as the comparatively frequent discovery of it at one time, in cases of cardiac and vaso-motor disturbance, had put all the clinical assistants on the lookout for the phenomenon. He could thoroughly agree with Dr. Taylor that vaso-motor paresis played an important part in the development, if not in the genesis, of this disease. The only case he had seen in the male subject had occurred in a young man subject to frequent attacks of flushing of the face, sometimes accompanied with high temperature, in whom the rapidity of the heart's action had led to a diagnosis of hypertrophy of the heart, not warranted by physical exploration. The eyes were not involved at the last time he saw the patient, nor was thyreoid enlargement sufficient to attract attention without special examination. He had now under his care in private practice a young lady not at all hysterical, subject to similar attacks of flushing which sometimes left behind for a short time wheals like those of urticaria; she had also had two attacks of sudden transient blindness, after which all that could be detected in the fundus was moderate congestion, and her cardiac action, rapid and irregular at these times, was at other times perfectly normal. No organic lesion of any kind had been detected either by himself or by more competent observers. It is possible that this might be an early stage of Graves's disease. Improvement had taken place under the use of minute doses of picrotoxin, a drug which Dr. Bartholow had prescribed in cases of exophthalmic goître, at the hospital, with very good results. One case especially he recalled which had been associated with purpura. He would like to know whether Dr. Taylor had met with this association. A very interesting case of acute exophthalmic goître had presented itself at the clinic, which Dr. J. C. Wilson might remember as the subject of one of his clinical lectures—that of an anæmic young girl affected from childhood with nystagmus, in whom goître and exophthalmia were asserted to have developed within a short time after a fall from a ladder. She was unable to button her collar, which friends had opened in attending to her after the accident.

Dr. **J. C. Wilson** recalled the case mentioned by Dr. Cohen, but not with sufficient distinctness to add anything of importance to the account already given. He briefly narrated two cases of Graves's disease, recently seen in his private practice, in which the symptoms had developed rapidly after mental shock. The patients were young women. The first, a servant, aged twenty-four, of previous good character, was engaged to be married to a young man who, within a day or two of a visit to her, was accidentally killed, and her first knowledge of his death came through the newspapers. Cardiac overaction at once developed, and within a month thyreoid enlargement and slight exophthalmia. Under rest and large doses of Fowler's solution complete recovery took place in a year. The second case was that of a lady, aged twenty, who rapidly developed the characteristic symptoms of Graves's disease after the shock and grief occasioned by the disappearance of a near and loved relative, and the discovery that he was a defaulter to a very large extent. The prominence of the eyeballs was in this case very slight; the other symptoms were characteristic. Under treatment by rest and arsenic decided improvement took place. It was now a month since she had last reported.

Dr. **Taylor**, in reply to Dr. Risley's query, whether any sign clearly foreshadowed the exophthalmia, could only say that he knew of none, nor did he see anything in the literature of the subject to aid one. It usually marked the height of the disorder, though it might be the first feature noticed, especially when it arose suddenly, as from shock or overwrought emotion. As to Dr. Meigs's objection that the three classical symptoms could alone and in conjunction constitute the disease, it seemed to him readily possible to recognize the early stages of this disorder in the peculiar vaso-motor disturbances, the extreme and unaccountable nervous excitability, the appearances of the skin, etc. In fact, the object of his paper had been to call attention to this very possibility, so that a quietus might be placed upon it at the very beginning if possible. The use of galvanism was a valuable aid in diagnosis, as Charcot and Vigouroux had pointed out, but in the treatment it had not been of greater use than some other measures, though it should always be used in the severer cases. Many of his own patients lived out of town, but upon those within reach he used it. In his endeavor to be brief he had not intended to say much on plans of treatment, leaving that for consideration elsewhere, but rather to speak of early recognition and *early* treatment, which should consist of rest, carefully regulated living and food, and the use of tonics.

(*To be concluded.*)

Book Notices.

California of the South. Its Physical Geography, Climate, Resources, Routes of Travel, and Health Resorts. Being a Complete Guide-book to Southern California. By Walter Lindley, M. D., and J. P. Widney, A. M., M. D. With Maps and Numerous Illustrations. New York: D. Appleton & Co., 1888. Pp. viii–377.

To him or her whose lot untoward fate has cast amid the vicissitudes of unmistakable winter and alleged spring on our northern Atlantic coast, a bitter sense of envious disappointment must be roused by reading of a climate mildly equable, where poor humanity's thermogenic apparatus is spared the alternating struggle between freezing and broiling environments, and where life seems to be an enjoyable continuity instead of a guerrilla contest for existence. But with the reading comes after a while a delusive oblivion of present discomfort and imaginative transfer to the pictured Utopia, as the whipped schoolboy's smartings are appeased by poring over Perrault's or D'Aulnoy's fairy tales. And, for winter reading, of all works based on sober fact and substantiated by meteorological records, we know of none that come so near to tempting fiction as the book now before us and Mr. Ernest Hart's letters from Orotava. The authors have confined their observations and descriptions to the five southernmost counties of California, which differ from the upper portion of that exceedingly elongated State as much, almost, as Florida differs from Maine, and they have judiciously tempered the records of scientific data with interesting pen-pictures of the scenery of the Pacific elysium, and an account of its agricultural and commercial resources. Whether for the physician who wishes intelligently to direct the exile of invalid patients, for the emigrant who contemplates making a new home on the southwestern shore of the continent, or for the pleasure-tourist planning a holiday ramble in one of the most charming parts of the world, this "guide-book" will be found to fulfill the promise of its title.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—P. Aubry, "La contagion du meurtre. Étude d'anthropologie." (3*fr.* 50.)

P. Asselin, Paris.—E. Doré, "Recherches expérimentales sur l'influence de la température des femelles en gestation sur la vitalité du fœtus."

J. B. Baillière et fils, Paris.—M. Simon, "Le monde des rêves." (3*fr.* 50.) —— Bouilly, Duplay, Picqué, Schwartz, Segond, Poisson, Pousson, et Harrison, "Chirurgie des organes génito-urinaires de l'homme et de la femme." (17*fr.* 50.) —— M. Chaleix-Vivie, "Des névralgies vésicales." (2*fr.* 50.) —— J. Béchamp, "Nouvelles recherches sur les albumines normales et pathologiques." (6*fr.*)

J. Fayoux, Poitiers.—Pion, Rolland, et Brossard, "Suette miliaire du Poitou, 1845–1887."

Hayez, Brussels.—P. Snyers, "Contribution à la pathogénie de la maladie de Bright, de l'albuminurie et des lésions rénales consécutives aux injections d'albumine."

G. Masson, Paris.—H. Mireur, "La syphilis et la prostitution dans leurs rapports avec l'hygiène, la morale et la loi." (5*fr.*)

Bureaux du "Progrès médical," Paris.—A. Ferret, "De l'ophthalmie granuleuse (ophthalmie endémique d'Algérie)." (2*fr.* 50. —— E. Rolland, "De l'épilepsie Jacksonienne." (3*fr.*) —— J. Babinski, "Sur une déformation particulière du tronc causée par la sciatique." (2*fr.*) —— P. Blocq, "Des contractures." (5*fr.*) —— P. Blocq, "Sur une affection caractérisée par de l'ataxie et de l'abasie." (2*fr.*)

Aschendorff, Münster.—R. Handmann, "Die menschliche Stimme u. Sprache in physiol.-psychol. Beziehung." (4*M.*)

P. Savy, Paris.—E. Verrier, "Clinique chirurgicale. Des Rapports de la grossesse, du travail et des suites de couches avec le traumatisme en général."

G. Steinheil, Paris.—E. Leflaive, "De la rhino-bronchite annuelle ou asthme d'été." —— P. Troisfontaines, "Manuel d'antisepsie chirurgicale." (3*fr.*)

F. Arnold, Munich.—"Vademecum für Pharmaceuten." (2*M.*)

W. Braumüller, Vienna.—R. von Pfungen, "Ueber Atonie des Magens." (4*M.*)

H. Bruhn, Brunswick.—O. Baumgarten, "Lehrbuch d. path. Mykologie." Part ii.

F. Deuticke, Vienna.—J. Gottstein, "Die Krankheiten des Kehlkopfes." 2d ed. (7*M.*)

N. G. Elwert, Marburg.—T. Rumpel, "Ueber den interstitiellen Leistenbruch." (1*M.*)

W. Engelmann, Leipsic.—C. Gegenbauer, "Lehrbuch der Anatomie." 3d ed., part i. (24*M.*)

F. Enke, Stuttgart.—S. Guttmann, "Jahrbuch d. praktischen Medicin," 1888.

T. C. F. Enslin, Berlin.—M. Schulz, "Impfung, Impfgeschäft u. Impftechnik."

G. Fischer, Jena.—Hertwig, "Lehrbuch d. Entwickelungsgeschichte." Part ii. (6*M.* 50.) —— C. Rieger, "Grundriss d. med. Elektricitätslehre." 2d ed. (2*M.* 50.)

G. Fock, Leipsic.—M. Küster, "Zur Pathologie u. Therapie des Inversio vesicæ fissæ." (1*M.*)

G. Hertz, Würzburg.—G. E. Rindfleisch, "Aerztliche Philosophie." (1*M.*)

A. Hirschwald, Berlin.—Langenbuch, "Sectio alta subpubica." —— W. Henke, "Handatlas u. Anleitung zum Studium der Anatomie des Menschen im Präpariersaale." Part i. (16*M.*)

H. Pohle, Jena.—F. Arnheim, "Lokalisation von Schallempfindungen mittelst der Bogengänge." (1*M.*) —— J. Boneks, "Nachweis, Entstehung u. Vorkommen des Schwefelwasserstoffs im Harn." (0*M.* 90.) —— O. W. Köppen, "Verhalten des Zellkerns im ruhenden Samen." (1*M.*) —— M. Richard, "Zur Kenntniss d. tiefen Blutgeschwülste am Halse." (1*M.*) —— A. Schubert, "Ueber Mediastinaltumoren bei Kindern." (0*M.* 75.) —— J. Stanko, "Enterorŕhaphie bei Fistula stercoralis u. Hernia gangrænosa." (1*M.*) —— R. Sy, "Die Eigennamen in der medicinischen Nomenklatur." (1*M.*)

G. Reimer, Berlin.—Stetter, "Kompendium d. Lehre von den frischen subkutanen Frakturen." (2*M.* 40.)

J. F. Richter, Hamburg.—H. Buchner, "Disposition zu Infektionskrankheiten u. Akklimatisation."

Schmid, Francke, & Co., Bern.—R. Nitabusch, "Beiträge zur Kenntniss der menschlichen Placenta." (1*M.* 25.)

Miscellany.

"Modern Methods of Antiseptic Wound Treatment" is the title of a pamphlet recently issued by Messrs. Johnson & Johnson, of No. 23 Cedar Street, the well-known makers of adhesive plaster and various other surgical appliances. The contents have been compiled from notes and suggestions by Dr. D. Hayes Agnew, of Philadelphia; Dr. A. C. Bernays, of St. Louis; Dr. S. W. Gross, of Philadelphia; Dr. Hunter McGuire, of Richmond; Dr. Thomas G. Morton, of Philadelphia; Dr. N. Senn, of Milwaukee; Dr. Stephen Smith, of New York; Dr. Lewis A. Stimson, of New York; and Dr. J. W. White, of Philadelphia. It contains also extracts from the writings of several other well-known surgeons. The collection has evidently been made with care, and it will doubtless prove of great service to practitioners who have not had opportunities for making themselves practically acquainted with the details of antiseptic surgery. Messrs. Johnson & Johnson announce their intention of supplying every physician who may apply for it with a gratuitous copy of the pamphlet.

The Health of the State of New York.—According to the State Board of Health's "Monthly Bulletin," there were 8,637 deaths reported in the State during the month of February. In each 1,000 deaths there were 9·90 from diarrhœal diseases, 9·89 from typhoid fever, 27·83 from scarlet fever, and 77·69 from diphtheria.

The Health of Boston.—During the week ending Saturday, April 7th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 26 cases and 4 deaths; scarlet fever, 12 cases and 1 death; typhoid fever, 9 cases and 2 deaths; measles, 54 cases. There were also 31 deaths from consumption, 17 from pneumonia, 2 from whooping-cough, 14 from heart disease, 7 from bronchitis, and 6 from marasmus. The total number of deaths was 183, against 205 in the corresponding week last year.

The Health of Michigan.—According to the State Board of Health's summary of returns for the four weeks ending March 31st, diphtheria was reported from twenty-five places, scarlet fever from thirty-three, typhoid fever from thirteen, measles from forty-nine, and small-pox from one.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending April 6th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 17th corresponded to an annual rate of 20·3 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Leicester, viz., 12·8, and the highest in Blackburn, viz., 31·6 in a thousand. Small-pox caused 18 deaths in Sheffield, 2 in Bristol, 2 in Manchester, and 2 in Huddersfield.

London.—One thousand six hundred and four deaths were registered during the week, including measles, 22; scarlet fever, 25; diphtheria, 22; whooping-cough, 92; enteric fever, 10; typhus, 1; diarrhœa and dysentery, 10. Diseases of the respiratory organs caused 458 deaths, and different forms of violence, 59. The deaths from all causes corresponded to an annual rate of 19·5 in a thousand. In greater London 2,031 deaths were registered, corresponding to an annual rate of 19·2 in a thousand of the population. In the "outer ring" 30 deaths from whooping-cough, 7 from scarlet fever, 6 from diphtheria, and 6 from measles were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending March 17th in the sixteen principal town districts of Ireland was 29·4 in a thousand of the population. The lowest rate was recorded in Newry, viz., 10·5, and the highest in Londonderry, viz., 46·4 in a thousand. In Dublin 196 deaths were registered, including 1 from diphtheria; measles, 5; scarlet fever, 3; typhus, 3; and enteric fever, 4.

Scotland.—The deaths registered in eight principal towns during the week ending March 17th corresponded to an annual rate of 21 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 10·1, and the highest in Glasgow, viz., 26·9 in a thousand. The aggregate number of deaths registered from all causes was 531, including 9 from measles; diphtheria, 5; scarlet fever, 3; whooping-cough, 16; fever, 5; and diarrhœa, 9. The death-rate during the week ending March 10th was 24·2.

Montevideo.—Eight hundred and eighteen deaths were registered during the two months ending January 31, 1888, including 40 from small-pox and 20 from enteric and typhus fever.

Callao.—The United States consul, in his dispatch dated March 3, 1888, states that "from the last report of Dr. Matto, the medical representative of the Government of Peru in Chili, it would appear that the ravages of the cholera in that republic are nearly concluded. Under date of the 1st instant, Dr. Matto reports by cable: 'Have returned from the south. Cholera declining. Has disappeared at Concepcion, Angol, Angeles, Chillan, Parral, and San Fernando. Cases still at Loto and Coronel. None at Talcahuano. At La Serena (to the north), Santiago, and Valparaiso, decreasing.' The condition of the public health at this port and Lima continues to be satisfactory."

Santiago de Cuba.—The sanitary inspector reports for the week ending March 24th one death from small-pox at the military hospital, and several cases of varioloid in the town.

Havana.—Three deaths from yellow fever and 14 from small-pox are reported for the week ending March 24, 1888.

Mortality Table, Foreign Cities.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow	March 17.	545,678	272	..	....	....	....	....	1	5
Warsaw	March 10.	439,174	201	..	....	4	....	....	2	4
Calcutta	February 18.	433,219	252	50	....	....	....	....	....	....
Rome	February 11.	382,973	242	..	...	4	....	3	....	1
Copenhagen	February 28.	300,000	130	..	...	....	...	....	5	7
Copenhagen	March 6.	300,000	135	..	....	....	....	1	6	4
Munich	March 3.	275,000	154	..	....	...	....	....	1	6
Edinburgh	March 10.	262,733	95	..	....	....	...	1	1	1
Palermo	March 17.	250,000	125	..	..	....	2	....	3	2
Belfast	March 17.	227,022	137	..	....	....	....	1	2	1
Genoa	March 17.	179,337	108	..	....	6	....	....	....	3
Leipsic	March 17.	170,000	69	..	....	....	....	....	....	7
Trieste	March 10.	154,500	120	..	....	1	....	....	....	1
Toronto	March 24.	130,000	38	..	....	....	....	....	....	4
Toronto	March 31.	130,000	18	..	....	....	....	1	....	....
Bremen	March 15.	122,000	37	..	....	....	....	1	....	....
Havre	March 10.	112,074	110	..	....	3	....	2	....	1
Havre	March 17.	112,074	104	..	....	7	....	1	1	2
Barmen	March 17.	109,000	42	..	....	....	....	....	....	3
Leith	March 10.	74,320	26	..	....	....	....	...	1	1
Mayence	March 3.	65,701	36	..	....	...	....	....	1	1
Cienfuegos	March 19.	40,573	38	..	....	28	....	....	....	....
Sagua la Grande.	March 17.	15,605	11	..	...	6	....	....	....	....

United States.

Ship Island.—The Secretary of the Treasury has approved the recommendation of the board designated under the act of Congress dated March 5, 1888, that the national quarantine station on Ship Island be removed to North Chandeleur Island, in the Gulf of Mexico.

The medical officer in charge of the United States quarantine station at Ship Island reports that the Norwegian barkentine Professor Lintner, from Port de France, Martinique, arrived at Pascagoula, Miss., and was sent to the quarantine station at Ship Island on the 30th ultimo, with two cases of small-pox on board. The sick have been removed to hospital, and the crew vaccinated. The vessel has been fumigated and cleansed, and is now undergoing quarantine.

Louisiana.—The following resolutions have been adopted by the State board of health:

Be it resolved by the Board of Health of the State of Louisiana, That its secretary be instructed to respectfully request the governor of the State to issue his proclamation of quarantine in accordance with the following recommendations: Such quarantine to go into effect from and after the 20th day of April, 1888, simply for inspection and fumigation—this to remain in force until the 1st day of June, unless changed by direction of this board; from and after that time all vessels subject to quarantine treatment shall be detained for observation, as hereinafter provided:

All vessels arriving at the several quarantine stations in the State, together with their crews, passengers, and their cargoes, shall be subjected to inspection by the quarantine officers at the said stations.

All vessels, together with their cargoes, crews, passengers, and baggage, arriving at the Mississippi quarantine station from intertropical American and West Indian ports shall be subjected to thorough maritime sanitation, according to the following schedule:

First class.—Vessels arriving from non-infected ports.

Second class.—Vessels arriving from suspected ports.

Third class.—Vessels arriving from ports known to be infected.

Fourth class.—Vessels which, without regard to port of departure, are infected—that is to say, vessels which have yellow fever, cholera, or other contagious or infectious diseases on board at time of arrival, or have had same on voyage.

Vessels of the first class to be subjected to necessary maritime sanitation at the upper quarantine station, without detention of either vessels or persons longer than may be necessary to place such vessels in perfect sanitary condition.

Vessels engaged in the tropical fruit trade and coming from known non-infected localities, and whose sanitary condition and health record are satisfactory, may be allowed to pass the quarantine station after inspection, subject, however, to such sanitary treatment and other measures as the board of health may prescribe.

Vessels of the second and third classes to undergo the same conditions, together with detention for observation for a period of five full days from hour of arrival in quarantine.

Vessels of the fourth class to be remanded to the lower quarantine station, there to undergo sanitation and detention of vessels and persons such length of time as the board of health may order.

The five days' detention, as above provided, shall apply to all ports of the Gulf of Mexico and the Caribbean Sea, exception being made in regard to vessels coming from ports south of the equator, whose period of detention shall be three days from time of disinfection.

All vessels arriving from Mediterranean or other ports known or suspected to be infected with cholera, or which may hereafter become infected, shall be subjected to maritime sanitation and such detention as the board of health may determine.

Vessels arriving from the above-named ports and places, and belonging to the second, third, or fourth class, as set forth in the foregoing schedule, shall not be allowed to pass the Rigolets or Atchafalaya quarantine stations, or other State quarantine stations which may hereafter be established, without having undergone a period of detention of forty days and thorough cleansing and disinfection.

New York.—The medical officer in charge of the Marine-Hospital Service reports that a seaman sick with small-pox from the steamship City of Augusta, a vessel plying between New York and Savannah, applied for hospital treatment on the 2d instant, and that he was transferred in the quarantine boat to the detention hospital, East River. The forecastle of the vessel has been thoroughly fumigated, the old bedding burned, sixteen of the crew have been vaccinated, and precautions have been taken to prevent the spread of the disease on shore.

San Francisco.—The secretary of the health department reports, under date of March 27, 1888, that "there have been 21 cases of small-pox here during this month, and 4 deaths. No cases have been reported since the 21st instant."

THERAPEUTICAL NOTES.

Ulexine, an alkaloid obtained from the common gorse (*Ulex europæus*), has been made the subject of experimental studies by Bradford ("Jour. of Physiol.," viii, 2) and Pinet, a summary of which is given in the "Lancet" for February 4th. The drug seems to have a special action on the respiration, paralyzing the vagus somewhat like curare. It acts first as a stimulant and then as a depressor of the respiratory mechanism. Large doses produce paralysis of the motor nerves, preceded by increased excitability manifested by quivering movements apparently of peripheral origin. It increases the blood-pressure and acts as a diuretic, in which capacity it has been used with success (in doses which are not stated) in cases of dropsy from heart disease in University College Hospital.

Ergot of Oats has been used by Dr. Bousquet ("Marseille méd."; "Union méd.," Feb. 19, 1888) in three cases of puerperal hæmorrhage, four cases of uterine inertia without hæmorrhage, three cases of the metrorrhagia of young girls or of the menopause, and one case of cancer of the uterus. He reports that its action was as prompt and lasting as that of ergot of rye, and that it has the advantage of acting as a general excitant and restorative in cases of prostration from prolonged labor or copious loss of blood.

Ipecac in Hæmoptysis.—Bernabei ("Boll. del. sci. med. di Siena"; "Gazz. med. ital. Lombard.") feels confident of always being able to check phthisical hæmoptysis within a few hours by giving two grains of powdered ipecac every fifteen minutes.

An Antiseptic Gargle.—The "Union médicale" credits Muller with the following formula:

Thymol	3½	grains;
Benzoic acid	45	"
Tincture of eucalyptus	180	"
Water	11,250	"

At bedtime the teeth are to be cleaned with powdered soap and a brush, and then the mouth can be rapidly sterilized by gargling for half a minute or a minute with the solution.

ANSWERS TO CORRESPONDENTS.

No. 172.—We know the firm, and consider them perfectly trustworthy.

No. 173.—The institution is not to be commended; consequently we can not commend any operation that purports to be peculiar to it.

No. 174.—The *sirop d'ipécacuanha composé*, otherwise called *sirop de Desessart* (*syrupus de ipecacuanha compositus*), is made by macerating 30 parts of bruised ipecac and 100 parts of senna leaves in 750 parts of white wine for twelve hours; expressing and filtering; adding to the residue 30 parts of the tops of *Thymus serpyllum* and 125 parts of the petals of *Papaver rhœas*; pouring 3,000 parts of boiling water over the whole; infusing for six hours; expressing; adding to the liquid 100 parts of magnesium sulphate and 756 parts of orange-flower water; mixing the vinous and the aqueous products; and adding white sugar in the proportion of 190 parts to each 100 parts of the liquid, making a syrup by simple solution over a water-bath.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

AN ADDRESS ON PREDISPOSITION IN TUBERCULOSIS.[*]

DELIVERED BEFORE THE SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

By WILLIAM T. COUNCILMAN, M. D., Baltimore,
ASSOCIATE PROFESSOR OF PATHOLOGY IN THE JOHNS HOPKINS UNIVERSITY.

When you honored me by the invitation to deliver this address, I hoped to prepare something which would be not only more worthy of the occasion, but at the same time an original contribution to medical literature. The limited time which was at my disposal has not enabled me to do this. I have thought that it would be interesting in this era of tuberculosis, when the infectious theory has gained almost general credence, to consider the question of predisposition. This question is one of the most important in the pathology of the infectious diseases, and in none is its influence apparently more marked than in tuberculosis. This predisposition to the disease was urged as one of the strongest grounds against the theory of its infectiousness. It was held that tuberculosis could not be an infectious disease, because only those who had inherited a certain anomaly of constitution acquired it.

Before directly taking up this question of predisposition, it seemed to me that it would not be amiss to mention briefly some of the newer ideas concerning especially the pathological anatomy of the disease—ideas which have come with the greater light that has been shed on the disease by the recognition of its infectiousness. In doing this I must apologize for repeating what to most of you is a well-known story. In this description I have taken more or less the pulmonary tuberculosis as the type, although it will fit the tuberculous lesions in general. We may now define tuberculosis as an infectious disease produced by the tubercle bacillus. Like many of the more chronic infectious diseases, the lesions produced by the bacilli do not present one unvarying form, but, as the result of their action, we may have a tissue produced of a more or less typical character, which appears both as distinctly circumscribed nodules (miliary tubercles) and as a more diffuse formation (diffuse tuberculous tissue). Further, the bacilli may cause inflammations with a cellular, fibrinous, or hæmorrhagic exudation. The most distinctive feature of the process (or rather what we have long been taught to consider the most distinctive feature), the miliary tubercle, does not always present the same histological structure. Neither the cells nor their arrangement in the tissue are always the same. The tubercles may vary in size from a nodule invisible to the naked eye up to the size of a pea, or even larger. They may be principally composed of large, pale epithelioid cells, with here and there a lymphoid cell between them, or these lymphoid cells may be the principal elements in the formation. There is often a well-marked reticulum between the cells, and, in addition to the epithelioid and lymphoid cells, giant cells are generally found, being mostly in the center of the nodule. Sometimes the nodule makes the impression of a distinct new formation of tissue, but most often appears to be simply a miliary focus of inflammation.

The same differences are seen in the tuberculous inflammations. These may be marked by exudations composed principally of large, pale epithelioid cells, or of cells identical with pus cells, or the exudation may be as typically fibrinous as that of croupous pneumonia. Sometimes red corpuscles are so abundant in the exudation as to give it a hæmorrhagic character. However different these various processes are when compared with one another, they have one point in common. Whatever the character of the exudation, it soon undergoes a form of degeneration which, though not confined to the tuberculous products, is found here more often than elsewhere, and occurs here under totally different conditions. This is the form of coagulation necrosis known as caseation, by means of which all tuberculous products finally become changed into a smooth homogeneous mass. If there is anything about the process which can be regarded as typical, it is not the presence of giant cells, nor of a special sort of tissue, but the tendency of all the products to undergo caseation. This coagulation necrosis is due partly to the absence of blood-vessels in the tuberculous products, but is more directly due to the action of the tubercle bacilli, for it occurs in nodules so small that nutrition could take place from the surrounding vessels.

That tuberculosis is an infectious disease, and that the tubercle bacilli are the infecting agents, are facts too well established to need further discussion. Probably the greatest advances in our knowledge of the disease that have been made since Koch's discovery of the bacillus have been as to the modes of infection. And this has been, not so much the question of the infection of the individual, but how further infection of the different tissues and organs takes place after the disease has established itself. It is especially to the work of Weigert that the most of our knowledge on this subject is due. We know now that the extent and character of the lesions produced are for the most part due to the number of bacilli which enter a part, and to the manner in which they enter. We have the acute miliary tuberculosis, presenting all the clinical features of an acute infectious disease, which is due to general blood-infection by large numbers of bacilli entering the blood-current; then the general disseminated tuberculosis, in which there is also a general infection of the blood (but the bacilli which enter the blood are fewer, or they enter it at intervals); then the tuberculous pneumonia, affecting larger or smaller portions of the lung parenchyma, and due to the aspiration of large numbers of bacilli furnished by a focus of the disease, usually a cavity, in some other part of the lung. The miliary tubercles are most probably due to a comparatively small number of bacilli carried to a part by means of the blood-vessels or lymph-vessels.

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[*] At the meeting of April 4, 1888, held at the Academy of Medicine, Dr. Councilman's address took the place of the regular work of the society, constituting the first annual address. It is the society's intention to have, each year, an address or a course of lectures by some one who has become distinguished for original work in scientific medicine.

These are only some of the various lesions which may depend on the manner in which the bacilli enter a part and their number. The ways along which the bacilli can enter a part can be only three. They can enter it only by means of canals or ducts which penetrate it, or by the blood or lymphatic vessels. Infection of the individual can take place by means of the respiratory system, the alimentary canal, the genito-urinary tract, and the outer surface. Infection by the respiratory tract is the most common, and next to this infection by the alimentary canal, this being more common in children than in adults. The genito-urinary tract furnishes the route of infection in a much smaller number of cases, and a few instances have been known of infection from the outer surface of the body. It is not always easy to ascertain with certainty the primary lesion of the disease. This is often of so little moment anatomically, in comparison with the secondary lesions, that it may readily be overlooked or placed in the same category with these.

The epithelial covering of the surface of the body forms so perfect a protecting mantel that it is extremely improbable that infection of this ever takes place without a lesion. The bacilli may, however, enter the body by means of the alimentary canal without causing any lesion at the place of entry. This mode of infection is seen in the mesenteric phthisis of children, in which the mesenteric glands are the seat of an extensive tuberculous inflammation, often with no lesion of the intestine; or the bacilli may pass through the epithelium of the mouth or pharynx, and the first seat of the disease be in the cervical lymph glands. We know that the bacilli do pass through the epithelial covering of the small intestine, and in cases of intestinal tuberculosis the first formation of tubercles is in the lymphatic tissue beneath this. They may pass into the lymphatics without producing any lesions at the place of entry, and first make their presence known by a tuberculous inflammation of the glands. The anatomical structure of an organ must also influence the character and the extent of the tuberculous lesions produced in it. Thus the lungs, by means of the branching system of the bronchi into which the bacilli soon enter, favor the conveyance of the virus from one point to another more than the liver for example. Not only do the lungs favor a primary infection, but, when once the disease is established, further infection of other parts easily takes place.

It is possible that another point must be considered as having an influence on the character and extent of the lesions. There may be a difference in the virulence of the virus. That the various *vira* may undergo certain modifications, and that these in many instances may be produced artificially, is well known. The small-pox virus is changed by passing through the cow into the vaccine virus; the anthrax virus may have its virulence modified by cultivating it at high temperatures or in certain media. In many of the infectious diseases there seem to be differences in the virus. One epidemic of scarlet fever may cause a large mortality; in another all the cases may be very mild. Neither the manner of infection, the quantity and virulence of the virus, nor the anatomical structure of the tissues are alone or together capable of explaining all the differences which we find in the character of the tuberculous lesions and the course of the disease. The animal body can not be regarded as a fixed chemical compound on which the action of a given substance is followed by a fixed and definite result. This is seen more particularly in the infectious diseases, in which there is a struggle between the living virus and the cells of the tissue. The cells in one case offer a much greater resistance to the action of the virus than they do in another. There is greater resistance to primary infection in the first place, and when the disease has once been established the further infection is resisted step by step. The differences in the character of epidemics of acute infectious diseases is probably only to be explained by differences in the virulence of the virus, for we can not suppose that the resistance of the tissues of a large number of people could be at once increased, nor is the amount of virus which serves for infection greater in one case than the other. The fact that there is often a greater mortality in the cases at the beginning of an epidemic than at its termination may be explained by the fact that the most susceptible were first attacked, and finally only those are left who naturally have a greater resisting power. Of two children exposed to the same source of infection, one may have a severe type of scarlet fever and the other be scarcely affected.

There is no condition in which the effect of different degrees of resisting power is better seen than in the various forms of pulmonary phthisis, and this is in great part shown by the varying extent of connective-tissue formation. In one case we see a great deal of connective tissue formed around cavities, around areas of tuberculous pneumonia, and around miliary tubercles, by which certain limits are set to the advance of the disease, or at least its advance is retarded. In other cases scarçely anything of this is seen, and the disease takes the form of a rapidly advancing inflammation with caseation. Not only are these differences often seen in a single organ, but the tubercles all over the body sometimes show a marked tendency to connective-tissue formation. Even in the clinical study of the disease we are aware of the differences in its course, which can only be explained by differences in the resisting power. But it is especially at the autopsy-table that opportunity is given for the study of these different effects of the tubercle virus. Many cases are met with in which the disease may be regarded as healed, or its course for the time arrested. Every pathological anatomist is well acquainted with the cases in which a circumscribed induration of the apices of the lungs is found with cicatricial contraction of the pleura over it, and which on section often shows calcareous masses surrounded by firm indurated tissue. On careful examination of such tissue, either with the naked eye or with the microscope, we generally find, either in the indurated tissue itself or in the lung tissue immediately adjoining it, small, yellowish nodules presenting the gross character of miliary tubercles, which on microscopic examination are shown to be such. In these cases there may be no evidences of tuberculosis, either elsewhere in the lungs or in the body in general, except a slight caseation, or more often calcification, of the bronchial glands. This affection of the bronchial glands shows us that the power of infection of the bacilli extended beyond the primary lesion. The same thing is true of tuberculosis in other parts of the body. In the mesenteric glands we often find no trace of it other than a slight caseation to which a deposit of lime-salts has given a mortar-like consistence, and which is surrounded by dense masses of connective tissue. In many of these cases it is difficult to say whether this condition of the glands is due to an old tuberculosis or to a past attack of typhoid. In the tuberculous glands, however, the caseation is more marked. The more closely one examines the cadaver for tuberculosis, the more evidence one finds of its prevalence, until the old saying, that in the end every one has a little tuberculosis, seems to have a certain amount of truth in it.

There are few ideas in medicine more firmly rooted than that there exists in all cases of tuberculosis a special predisposition of the tissue for the disease; this predisposition we can only regard as some condition of the cells or fluids of the body which favors the growth of the bacillus. That the soil in which the bacteria grow does exert some influence on their growth can not be doubted. The cases we have just been speaking of—those cases which have been designated *latent tuberculosis*—are examples of the disease on, for it, unfavorable soil. They are hardly to be explained under any other theory than that there is in these cases some condition of the tissues by which a greater resistance to the growth of the bacilli is offered. It is probable that in all cases of lung infection the quantity of bacilli under whose influence the disease begins is not very large. We are not able to trace in these cases the very beginning of the infection, but we can study the secondary infection of other parts of the lungs in its incipiency, the bacilli being conveyed there by the same route as in the primary infection, along the bronchial tubes. The number of bacilli to whose influence these secondary foci of infection are due is probably much greater than in the first infection. We can scarcely imagine any circumstances, assuming the bacilli to be contained in the inspired air and so taken into the lungs, in which many bacilli could be contained at once in the respired air. It is more than probable that the first focus of the disease is due to very few bacilli, possibly not more than one or two. It is also probable that most of us at some period of our lives have had the bacilli in our air-passages. Why in the one case the bacilli do not exert any action at all, and in another case do enter the tissue, multiply, and produce the disease, can only be explained by differences in the tissues. An idea that is more or less prevalent—namely, that the bacilli find other pathological conditions in the lungs which afford them suitable conditions for their settlement and growth, that there is first a bronchitis or a pneumonia which becomes tuberculous—has no foundation in fact. In the vast majority of cases the bronchitis or pneumonia which is often the first physical sign of any trouble in the lungs, and which afterward is followed by unmistakable signs of phthisis, is in the beginning tuberculous, and does not have the disease ingrafted on it. More than this, in chronic emphysema, that disease of the lung in which bronchitis is almost constantly present, we rarely have an accompanying tuberculosis. Even where the bacilli do find conditions favorable to their growth there is the greatest difference in the effect produced. In one case but a circumscribed portion of the lung is affected, in another the disease spreads almost without limit.

A close study of the tuberculous lesions must impress us with these differences in the character of the lesions, and many of these are due to the various degrees of resistance of the tissue. A most important point in this connection is whether this condition of the tissues, this lack of resisting power which allows the infection in the first place and resists its advance very feebly, is something which is peculiar to the tuberculous individual which he has acquired by inheritance, or whether it is a general weakness of the tissues, a diminished degree of vitality in the cells, if we choose to put it in that way, which may be either transmitted by inheritance or acquired. That this predisposition to the disease is inherited is an opinion firmly rooted in the minds of most practitioners. All text-books, in discussing the ætiology of the disease, lay great stress on this inherited predisposition. It seems to be a fact that is based upon common experience. It is so firmly impressed on the mind that in the examination of a patient in whom the disease is suspected the first question asked has reference to his family history. And few facts are better established than that in the vast majority of tuberculous individuals a family history of the disease may be obtained. We are convinced, however, that the importance of this family history as showing that some special condition of the tissues, something analogous to a peculiarity of feature or expression, is transmitted, has been very greatly overestimated. In the first place, it must be remembered how common the disease is. If the general statement that one seventh of the human race are victims to it be accepted as correct, when we except those countries where the disease is rare—certainly rare in comparison with the countries in what we may call the tuberculous belt—then where the disease is most common the number of its victims must be more than one seventh. This is only counting the deaths from the disease, and not the cases, probably fully as frequent in number as the deaths, where the disease is recovered from or its progress arrested. We do not think it would be unsafe to say that in those lands where tuberculosis is most common forty per cent. of the people have at some time in their lives had some tuberculosis—in many cases, however, a very slight attack.

If we suppose that there is some special peculiarity of the disease transmitted, a tuberculous constitution as it were, it can not be supposed that it is only transmitted by those who die of the disease. Those who recover, or who, having the disease only in a very slow latent form, die of some intercurrent affection, must also transmit this disposition. So that even the law of chance would favor a family history, and when the family history extends beyond the parents of the individual and takes in his remote and collateral ancestors, it must be rare to find a patient who has not had some member of his family affected. The disease is often spoken of as skipping a generation. We might also find on careful inquiry that some ancestor of the tuberculous individual had a certain color of hair or a certain conformation of nose, and might in some way connect these with the disease. It is also certain that this predisposition or lack of resistance can be acquired. It is a matter of common experience that all conditions of life which produce a low state of vitality in the system predispose to tuberculosis. Among these causes must be mentioned insufficient food, living in dark, ill-ventilated, and crowded apartments, constant exposure, and excesses of various sorts. Occupations which bring a number of people together in factories are attended with a higher degree of mortality than more solitary occupations. The mortality from the disease in the chief industrial cities of Switzerland is much greater than in the others, although the inhabitants are in general better off. All the conditions which we have mentioned as producing this lack of resistance are combined with other circumstances which in a marked degree favor the infection. No condition of life, the crowding together of prisoners, nor the insufficient food, nor the exposure, will of itself produce the disease, although the low vitality of the tissues will favor the action of the virus when it is once introduced. The high tuberculous statistics of almshouses, prisons, and factories can in great part be explained by the fact that in the atmosphere of such places there are many more tubercle bacilli than in the outside air. Among a lot of prisoners and factory operatives there must be a number of cases of phthisis with cough and expectoration. The bacilli from the dried sputum form a part of the inspired dust of such places. The oft-cited case of the Brompton Hospital, in which, notwithstanding the number of tuberculous patients, there were no cases of infection among the house staff and attendants, only shows that the general health of the attendants must have been excellent, or that the hygienic regulations of the place were good. It forms a remarkable exception to what is observed in hospitals elsewhere, particularly those in Germany.

There is another fact that must be considered in judging of the predisposition. A condition of malnutrition which seems to be the forerunner of the disease is very often directly caused by the disease. Too much stress can not be laid on the fact that a pulmonary tuberculosis must be rather far advanced before physical signs which are absolutely diagnostic of the disease can be elicited even by the most skilled diagnostician. The earliest, most important, and only certain diagnostic sign of the disease, the presence of the tubercle bacilli in the sputum, is availed of by very few practitioners, and without this what we should regard at the autopsy-table as a well-marked case of tuberculosis might be overlooked or mistaken for a simple bronchitis. While we do not doubt that weak and ill-nourished individuals may be less resistant to infection than the strong and robust, it must not be forgotten that nothing so soon produces this condition as tuberculosis. The fact that a patient has lost flesh is consciously or not taken into consideration by the clinician in his interpretation of physical signs. The children of tuberculous parents are apt to be less vigorous, just as the children of weak parents generally are, and may be less resistant to the disease than healthy children, but that any special weakness is transmitted is doubtful. It seems to us that this difference in resistance is shown better by the course of the disease after infection takes place than in the infection. Much better ground can be adduced in favor of the predisposition from the anatomical study of the disease than from the clinical. We constantly find at the autopsy-table cases in which a latent tuberculosis of the apices of the lungs or of a lymph-gland suddenly breaks through the limits which are seemingly set to its advance and becomes generalized. Are these cases only to be explained by a lowering of the at first high resistance of the tissues? In many cases this is almost certainly so. These are the cases in which a typhoid fever or some other infectious disease is followed in a few months by a rapid tuberculosis, and at the autopsy we find that a tuberculous mesenteric gland has broken through into the peritonæum, or that a circumscribed tuberculosis of the apex of the lung has rapidly extended, or that a focus somewhere has broken into a vein leading to a miliary tuberculosis. Such cases are more often seen in children, following their infectious diseases, than in adults. Infection seems to take place more readily after certain diseases, especially after measles. It is also probable that in many cases a high resistance to the disease in the first instance may be gradually overcome.

We find more indication of tissue resistance in the primary focus of the disease than in the secondary foci, although even here it must be borne in mind that we have to do with a gradually increasing amount of virus, and, while the tissue offered some resistance to the small amount of virus on which the first lesion depended, when this becomes greater in amount the resistance may be almost at an end. We know that animals which, under ordinary circumstances, are almost immune to the disease, no longer have this immunity when the amount of virus used for inoculation is a large one. Dogs, which naturally do not acquire the disease and can resist inoculation with a small amount of virus, have this resistance overcome when a larger amount is used. The resistance to the disease can also be increased. The cases are happily not rare where patients with the disease well marked have entirely recovered after change of air and of the habits of life. We can not suppose that mountain air can exert any lethal influence on the organisms themselves, but, in placing the individual under better hygienic relations, we raise the resisting power of his tissues.

In considering the influence that tuberculous parents transmit to their children, we must remember that opportunities for infection are greater in a family in which there is a tuberculous individual, especially if that individual is the child's mother. Such children are exposed to infection from the hour of their birth. They are, in the first place, exposed to infection from their mother's milk. We know that bacilli may be contained in the milk of tuberculous cows, even when the gland or the udder is free from tuberculosis. Kissing of the child by a mother whose sputum contains bacilli is another and probably frequent source of infection. Frequently no great care is exercised in the expectoration of the tuberculous individual, and particles of the dried sputum become mixed with the atmospheric air. In addition to this, the child has the habit of putting everything which he sees into his mouth, and thus runs risk of infection.

Recently another theory has been brought prominently forward. This is that many cases which are apparently due to an inherited tuberculous diathesis are really cases in which, not the diathesis, but the disease is inherited. It has seemed to us that there are many tuberculous affections which are best explained, or probably only to be explained, on this assumption. In the cases of primary tuberculous lesions of the bones in children we can scarcely understand, from our present knowledge of the disease, how the infection could take place. The tubercle bacilli could only be conveyed to this tissue by the blood, and how, in the absence of other lesions of the disease, can the bacilli get into the blood? In children the bacilli can only enter the body by the respiratory or the digestive tract, or by lesions of the integument. We can understand how they could get into the lymphatics, and be conveyed to the glands, without producing lesions at the place of entry, but it would be a far more difficult thing for them to get into the blood. In case they entered the blood by passing through the entire lymphatic system, they would have to pass through the lymph-glands. Even apart from the fact of the difficulty of any solid body like a bacillus passing through the gland, there is no tissue in the body which apparently offers a more favorable soil for the development of the bacilli, and they would be most apt to develop here. These cases of tuberculosis of the bone are primary, as is shown by the frequency with which recovery takes place after appropriate treatment, and sometimes without any treatment. Of course, it is always possible that there may be somewhere else in the body, possibly in a lymph-gland or in the lung, a small focus of latent tuberculosis which may be the source of the bacilli, but the frequency of recovery speaks against this. That these tuberculous bone lesions are preceded by trauma is believed by most surgeons. Of course, it is known that there is nothing so uncertain as traumatic histories; a diligent inquiry made by a biased inquirer can get a traumatic history for almost every surgical affection, but in some cases the connection between the disease and the trauma is clear and definite. If we, then, suppose that these cases are due to the accidental entry of single bacilli into the blood, and that they find in the inflammatory tissue caused by the trauma proper conditions for growth, then there must be a rather remarkable conjunction of circumstances which would bring the bacilli to a certain point just when they would find there the most suitable conditions for their growth. The ways for them to get into the blood are so difficult and uncertain that we can not suppose that many could enter at one time, or that this takes place frequently. It is true that, should any thus get into the circulation, the bone-marrow is one of the places where some of them would probably lodge; but, even if there were a dozen bacilli in the circulation, the chances would be all against several or one lodging in some circumscribed part of a bone. And we can not suppose that they could circulate for an indefinite time in the blood.

The liver and spleen are as susceptible to the influence of the tubercle bacilli as any other organs, and offer, possibly, more favorable anatomical conditions for the retention of the virus from the blood than the bones do. We know that, almost without exception, miliary tubercles are found in the liver when there is any degree of pulmonary tuberculosis. Isolated tubercles are also found in the spleen, in the kidneys, and elsewhere, being caused by the accidental entry of a few bacilli into the circulation, possibly from the formation of tubercles in the small blood-vessels, or in some other way. Yet who of us has ever seen a primary tuberculosis of these organs? although, if the generally assumed way of bone infection is correct, a primary tuberculosis of the liver, spleen, and kidney should be just as frequent as of the bones. It is true that these organs are not exposed to the supposed favoring influence of trauma, but, if this inflammatory tissue, which is supposed in an indefinite sort of way to be present after slight injuries and of whose character and extent in these cases we have no positive knowledge, is followed so often by tuberculosis, why do we not have primary tuberculosis developing oftener in granulation tissue everywhere, and especially in the bone granulations after fracture?

The theory of the direct inheritance of the disease in these cases gives us another, and we think a better, explanation. In accordance with this we must suppose that the bacilli pass from the mother into the circulation of the fœtus, or that the disease is directly transmitted to the fœtus by the infected father without any affection of the mother. The bacilli may be deposited in the organs of the fœtus and may produce some changes here which are of little importance. This is a favorite locality for such a congenital infection. There would then be a latent tuberculosis of such organs, and, like similar cases in the adult, this might last for a considerable time without doing any harm, but is always ready when the conditions are more favorable to extend its growth. *A priori* there is no reason why the disease should not be inherited. It would make the analogy between it and syphilis much stronger, and it would be rather singular if tuberculosis, presenting as it does so many points of similarity to syphilis, should differ from it so broadly in the matter of inheritance. These cases would belong to the same category as the syphilis hereditaria tarda. It is improbable that the tubercle bacilli should remain in the tissues without producing any lesions. Though syphilis has long been known to be inherited, it is only within a few years that we have learned to recognize in certain lesions of the bones the undoubted evidence of its presence in the fœtus. It is possible that the lesions of the inherited bone tuberculosis may differ in some respects from the ordinary lesions of the disease, and that we may find in the bones lesions as constant and characteristic as those which Wegner has pointed out in syphilis. Against the general adoption of this theory to explain the primary tuberculosis of the bones cases of its occurrence in middle age might be cited. We have seen three cases of primary tuberculosis of the vertebræ, all in negroes, in which the ages were thirty-six, thirty-nine, and forty-five. It would seem improbable that the inherited disease should remain latent for so long a time, but cases of congenital syphilis have been known to first appear later than this.

Aside from these cases of bone tuberculosis, which, to say the least, make it appear very probable that the disease may be inherited, there have been several instances in which the fœtus of a tuberculous mother has been infected. There is a possibility that many of these cases may have been syphilitic, for the lesions of the two diseases may readily be confounded. Charrin has reported a case of abdominal phthisis in a fœtus, but no examination for bacilli was made. There is, however, one undoubted case. Johne found a tuberculosis of the lungs in an eight-months-old calf fœtus, and in this case the bacilli were present. This one piece of positive evidence that the disease may be inherited is worth all the negative. Numerous cases of undoubted tuberculosis have been seen in children in whom the period after birth has been too short to make an extra-uterine infection probable. Lannelongue gives the statistics of 1,005 cases of external tuberculosis in persons under the age of fifteen; 87 of these were under one year, and 6 were under nine weeks. The statistics which Orth has collected from the abattoirs in Berlin are not so favorable for the inheritance theory, but they do not exclude it. From the 1st of April, 1885, to the same time in 1886, 78,733 calves were killed, and among these only 7 were found to be tuberculous. Of the 7, 1 was under four weeks and 1 under six weeks, ages which would lead one to think rather of intra-uterine than extra-uterine infection. Landouzy and Martin have succeeded in producing tuberculosis in a guinea-pig by inoculating it with the lung of a fœtus from a tuberculous mother. Their experiments, however, were repeated by Wolff with negative results. Jani has investigated the tissues of a five-months fœtus whose mother died of acute miliary tuberculosis without finding any bacilli. To any one acquainted with the difficulties of finding isolated bacilli in tissues this should not seem astonishing. Even if a few were present in every organ, it would have been nothing more than the merest chance if he had found them.

Various attempts have been made to find some condition of the body which could be pointed out as the mark of the tuberculous diathesis. Freund has called attention to an early calcification of the first rib, in consequence of which the mobility of the thorax is much impaired, and has attempted to show the connection between such a condition and tuberculosis of the lungs. Others have sought the mark of the diathesis in the so-called paralytic thorax caused by atrophy of the respiratory muscles, a condition that is more often indicative of phthisis than of a predisposition to it. Lebert has called attention to the frequency with which narrowing of the pulmonary aorta is found in phthisis. Others have seen the mark of the diathesis in an indefinite sickliness, a disposition to take cold, and to inflammatory affections of the mucous membranes. Some regard the disease as especially frequent in those of the lymphatic habit, others find it most often in the sanguineous. None of these views have found any general acceptance.

Some conditions of the circulatory system seem to oppose the disease. Tuberculosis is rather rarely associated with those forms of cardiac disease in which there is mitral regurgitation. Orth explains this by supposing that this condition of the circulation makes all parts of the lungs more hyperæmic. He supposes that the anæmia of the apices of the lungs especially favors the location of the disease in this part. We have never seen any reason to believe that the apices of the lungs were more anæmic than any other parts; besides this, tuberculosis of the lungs is as uncommon in emphysema as in mitral regurgitation, and pulmonary emphysema is hardly a disease which can be regarded as causing hyperæmia of the lungs.

Support has been found for the belief in a special inherited tuberculous diathesis by comparing this to the well-known inheritance of hæmophilia. There is no analogy between the cases. In hæmophilia there is no inherited predisposition to the disease, but the disease itself, which probably consists in some alteration of the blood-vessels, is inherited.

To the idea that there is some condition of the tissues which in the one case favors, in the other resists, the action of the tubercle virus, the objection has been made that there is no analogy for this in the lower animals. Different rabbits or guinea-pigs inoculated in the same way and with the same amount of tubercle virus die in about the same time, and the lesions are the same. But these animals are much more susceptible to the disease; for them the tubercle virus is as potent probably as the virus of the plague is for man, and the question of resistance does not come in. In the bovine tuberculosis, however, we find anatomically the same differences in the lesions, and the same evidences of resistance that we find in man.

It seems to us that we have to suppose that there is some special condition of the tissues in consequence of which the resistance to the action of the tubercle bacilli differs. This is shown not only in the greater tendency of certain individuals to primary infection, but especially in the course of the disease after primary infection. It is uncertain whether this lack of resistance lies in some general weakness of the tissues or is the result of some special condition, although most facts speak in favor of its having no special character. It may be either inherited or acquired. There is much that favors the theory that tuberculosis is more often directly inherited than most suppose.

Original Communications.

ON CYSTOSCOPY,

AND THE NEW CYSTOSCOPE OF NITZE AND LEITER.

*WITH A DEMONSTRATION OF THE SAME.**

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Mr. Chairman and Gentlemen: The two new cystoscopes of Dr. Max Nitze and Mr. Josef Leiter are the improved forms of an instrument known to the medical world since the year 1879. It was formerly called the Bruck-Nitze-Leiter or Nitze-Leiter cystoscope.

Bruck, a German dentist of Breslau, Silesia, was the first who, in 1857, used platinum wire heated to whiteness for illumination of parts of the body. He tried to accomplish this by making use of the diaphanic qualities of the tissues. To examine the bladder he introduced a strong light, the white-hot platinum wire, into the rectum and a tube *per urethram* into the bladder. Through the latter tube he then inspected the bladder and its adjacent parts. Twenty years later Dr. Max Nitze proposed to introduce the white-hot platinum wire directly into the cavity or canal to be examined. He designed and constructed various instruments with which he intended to inspect more closely the urethra, bladder, stomach, etc., the two latter organs through a telescope situated in a central cavity forming the axis of the instrument.

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* Read before the Section in Surgery of the New York Academy of Medicine, April 9, 1888.

But these instruments were very defective yet. They were improved and made available for general use by the patience and perseverance of Leiter, a well-known instrument-maker of Vienna, after many months of expensive and troublesome experiments. On the 9th of May, 1879, the cysto-urethroscope was presented to the Society of Physicians of Vienna by Dr. Nitze.*

There is no doubt that Dr. Nitze is the inventor of the urethro-cystoscope, and that the medical profession is indebted to him for his continuous efforts, extending over more than twelve years, to improve the instruments. But at the same time we must appreciate the ingenious work of Mr. Leiter. He also deserves that his name be for ever connected with these electric endoscopes.

The cystoscope (Fig. 1), then, consists of a silver tube of the shape of a catheter, in the short beak of which a platinum wire is fastened. The latter is made incandescent by means of an electric current which passes through it, and then darts its rays upon the wall of the bladder through an oval window in the concavity of the beak, covered with transparent quartz. To convey the current of electricity to the platinum an insulated wire runs through the whole length of the shank; the metal of the tube forms the connection with the opposite pole. The platinum wire is surrounded by a combination of pipes through which a current of cold water runs, to keep the heated instrument perfectly cool. They measure only one millimetre and a half in diameter and pass through the whole length of the sound, entering at its collar. According to Nitze's design, a telescope is introduced into the shank of the cystoscope, as above mentioned. It enlarges and magnifies the spot coming into sight. Without this telescope we should not see much more at the time than a spot of about the size of a pea; with it we are enabled to inspect a portion as large as a silver dollar, and even more.

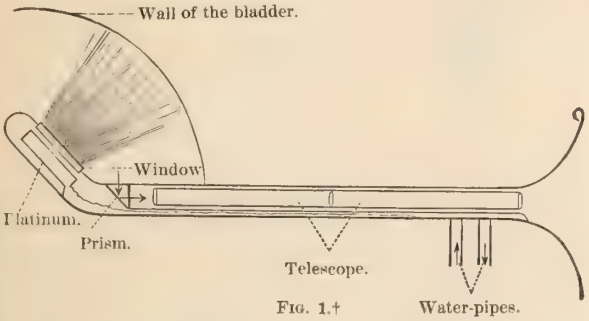

Fig. 1.†

At the junction of beak and shank corresponding to the concave side a rectangular prism is cemented in, the hypotenuse-plane of which acts as a mirror on account of the total reflection of the rays. Thus a diminished, inverted real picture arises in the shank of that wall of the bladder which is situated at a right angle to the longitudinal axis of the instrument and opposite the prism. It is again inverted by means of the lenses of the telescope and thrown to the outer end of it, where the examining person looks at the now upright picture through the magnifying ocular of the telescope. At the middle of the upper circumference of the funnel-shaped handle a small knob is soldered. It enables us to be permanently informed to which side the beak points.

If the fundus of the bladder is to be inspected with this instrument it must be turned 180° and its handle deeply depressed between the thighs of the patient, the latter being in the recumbent (lithotomy) position, the best for examination with the cystoscope. This manipulation may sometimes be very painful. To avoid this, a second instrument (Fig. 2) is made with the window for the incandescent platinum on the convex side of the beak. There is another window at the end of the straight tube through which the observer looks with the telescope. Of course there is no prism.

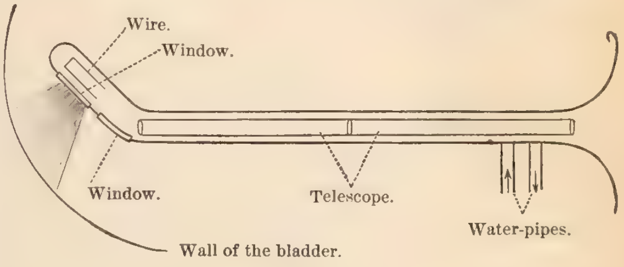

Fig. 2.

In using the original cystoscope there were needed, besides a Bunsen's battery with a special fluid, a rheostat, to give the current with the greatest subtileness of the necessary strength in each case, and a reservoir containing about two or three gallons of cold water. These accessory apparatuses complicated the instrument very much and made it very expensive, in consequence of which cystoscopy was very rarely resorted to. The new instrument was only bought by some larger clinical institutions and hospitals and used by a few specialists and surgeons who take interest in investigation of diseases of the bladder, such as Nitze, v. Dittel, Nicoladoni, Ultzmann, Sir Henry Thompson, and the late Dr. Maas, professor of surgery in the university of Würzburg, Bavaria. They all unanimously and repeatedly praised the excellent results of inspecting the bladder.

The enormous advance in electro-technique made in the last few years also improved the cystoscope. Edison's lamps of a very small caliber, so-called mignon-lamps, well known to you all, took the place of the platinum wire and did away with the many accessory apparatuses, especially with the water-pipes. The new cystoscope is very handy and not expensive.

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* "Wiener med. Wochenschrift," 1879, No. 24, and "Wiener med. Presse," 1879, No. 26.

† Instead of the wire loop at the end of the instrument there should be a straight wire.

That the two men who invented and constructed the original instrument are at variance in regard to the priority of the improvements may be immaterial to us. We derive from the controversy—that even found its way into Dr. Nitze's newest and lucid essay, "Beiträge zur Endoskopie der männlichen Harnblase" *—two cystoscopes, made in accordance with the same principle and varying only in some trifles. It seems that both are equally good and useful and of the same price ($18 without duty). Leiter's cystoscope shows the old pattern with the improvements mentioned. A key near the handle can be made to break or make the current by turning it to the right or left upon or from an ivory plate. The shank of the instrument is somewhat short; its telescope diminishes the part in view a trifle. Why it does not show it in its normal size I do not know. Nitze puts the mignon-lamp into the end of the beak and does not protect it with transparent quartz. He says that it is not necessary, and he is thus enabled to use lamps of a larger size and therefore a brighter light. His telescope magnifies. The shank is an inch longer than that of Leiter's instrument, the beak a trifle shorter. (The wires of the battery are connected with the so-called "tongs" that are attached to two isolated metal rings at the collar of the instrument. A slide makes and breaks the current.) Nitze constructed two more cystoscopes for the thorough and easy inspection of the fundus of the bladder and of the internal orifice of the urethra with the surrounding portions of the bladder, and especially of a part of the prostate. In these the prism is situated in the beak of the sound close to the mignon-lamp. In the first (the cystoscope for the fundus), the lamp and prism face the convex side of the beak; in the second (for the internal orifice of the urethra), the concave side. The picture arising, after having passed a system of two strong convex lenses in the beak, is reflected from a mirror fastened at the curvature of the instrument. Another lens in the middle of the shank throws the picture to the outer end, where the examining person again looks at it through the magnifying ocular. Both certainly are very important instruments.

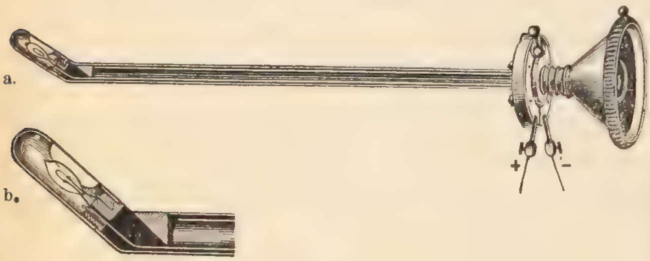

FIG. 3.

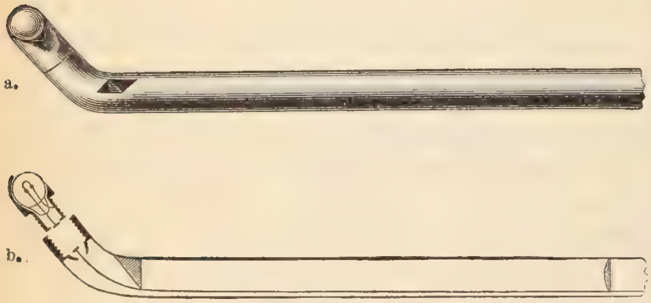

FIG. 4.

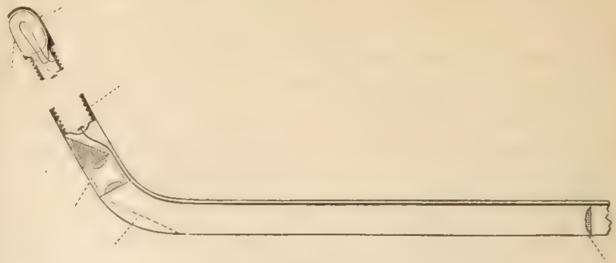

FIG. 5.

On account of the differences named, Nitze alleges superiority for his cystoscope. Nevertheless, I first sent for Leiter's, because he makes use of the mignon-lamps also for urethroscopy in a very practical manner. To be sure, a kerosene-lamp with one or a few burners or a gas-lamp gives sufficient light to illuminate the urethra by means of a head-mirror through Grünfeld's or Klotz's urethral endoscopes; but it is undoubtedly an advantage to have an even brighter light in a handle that is easily attached to the endoscope after it has been introduced, and can readily follow the motions of the patient. It also seems that it is just as handy as the former patterns after some practice.

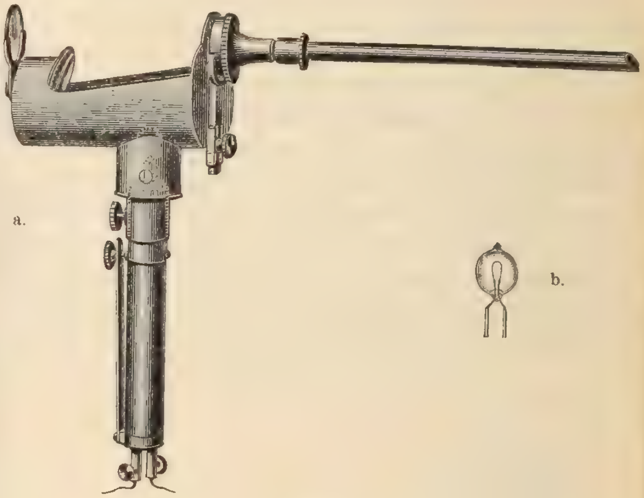

FIG. 6.

On account of the possibility of using the same electroscope, only with different head-pieces, for rhinoscopy, laryngoscopy, œsophagoscopy, otoscopy, etc., v. Dittel called it "pan-electroscope." I shall also demonstrate it hereafter. A thorough description of these instruments—also of the new gastroscope, which illuminates portions of the wall of the stomach as large as the palm of the hand—can

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* Langenbeck's "Archiv für klinische Chirurgie," vol. xxxvi, 3, p. 661.

be found in J. Leiter's separate edition of his catalogue of surgical instruments, Vienna, 1887.

For the generation of the electric current I ordered the battery designed by Leiter, too. Nevertheless, any electric battery used for galvano-caustic purposes will light the bow of carbonized vegetable fiber. But with Leiter's battery we are able to regulate the strength of the current with great ease by millimetres. He slowly dips the elements into the fluid of pure chromic acid, sulphuric acid, and water by means of a screw and winch, thus taking care to reach exactly the strength of the current that is needed to light the bow sufficiently without destroying it. Should this happen, however, the mignon-lamp is very easily replaced by a new one. I have been using the same and first lamp for the last ten weeks. It is worth mentioning that the six small elements can be converted without trouble into one very powerful, and then be used for galvano-caustic purposes. P. Hartwig, an instrument-maker of Berlin, who makes Nitze's cystoscope, sells an electric battery constructed exactly after the same principle.

I received Nitze's cystoscope and the battery only this afternoon, and so can not say much more about the battery at present. But, according to information I got from Dr. Nitze a few days ago, it seems to work well likewise.

In using the cystoscope we put its beak into a glass or bowl under water (the above-mentioned key touching the metal of course), and then slowly turn the winch until the lamp gives a constant and bright light. Then we break the current by bringing the key in contact with the ivory plate, dip the instrument into glycerin (vaseline would dim the window and prism), and introduce it into the bladder. This manipulation is just as easily performed as the introduction of a simple catheter. Before we apply the instrument, the bladder must be washed, provided the urine is bloody or cloudy with mucus, and then be partially distended with from five to six ounces of clear water. If the urine is quite clear, no preliminary washing is necessary. The water cools the heated beak without getting warmer itself. As soon as we feel, after the introduction, that the beak moves freely in the bladder, we light the lamp again by simply turning the key to the left, and are now able to inspect the bladder in perfect daylight.

The advance, Mr. Chairman, that will result from this simpler and more convenient cystoscope for the diagnosis and treatment of diseases of the bladder is great and easy to see. There is no doubt that cystoscopy, this new method of ocular inspection of the interior surface of the bladder, "has as great importance for the diagnosis of diseases of the bladder as laryngoscopy has for those of the larynx" (Nitze).

I should here like to say that I had studied this chapter carefully and with great interest for many months, when Nitze's treatise, mentioned above, the best and most complete we have on cystoscopy in literature, was published. It is rather difficult now to bring out anything new on this subject. Nitze leaves hardly anything unsaid that could be thought of only in regard to the future progress in diagnosis and treatment with the help of the cystoscope. I follow him in some of my further explanations.

Before giving you a summary of this advance, I must mention the conditions that have to be fulfilled if the endoscopical examination of the bladder is to be successfully made. I just said "advance." I should better say "*future* advance" that will be surely made in the diagnosis of obscure diseases of the bladder with the help of the cystoscope, and that not only by the specialist, but by the general practitioner also.

There are three conditions:

1. The caliber of the urethra must be sufficiently large to allow of the passing of the cystoscope (No. 23 French).

2. There must be sufficient capacity of the bladder. Nitze usually injects five ounces, a quantity that can be retained in nearly every instance. To get an easier view of the upper region he adds some air. The bubbles can be seen very distinctly with the cystoscope.

3. We must be able to have a transparent fluid in the bladder, at least during the time of examination. It is important to know, however, that the water does not need to be perfectly clear. The view we get when the water is a little muddy is still quite satisfactory. In cases of hæmaturia originating in the bladder, it will be advisable to postpone the examination until the flow of blood has ceased.

Then, also, I should like to tell you, Mr. Chairman and gentlemen, what is to be seen in the healthy bladder before we inspect the morbid one. Of course, the picture is more monotonous than, for instance, that of the larynx, but it is very interesting nevertheless.

The normal mucous membrane of the bladder mostly has a pale, yellowish-red coloring in bright illumination, more rarely a pink one. If the prism is brought near enough, we perceive in it fine ramifications of small blood-vessels, similar to those that we see on the retina with the ophthalmoscope. Furthermore, there come into view irregular projections (the innermost layer of the detrusor muscles) between flat, but sometimes very deep, holes. The latter ones are "acquired diverticula," which are found, according to Nitze, much oftener than is usually believed. The other class of diverticula—the congenital ones—will be seen when the mucous membrane has its normal smoothness and only shows slight elevations. At last the orifices of the ureters are conspicuous. In most cases they can be seen with great ease. I myself have been able to see them very plainly in all the cases I have thus far examined. They appear as long, slit-formed notches in the middle of an oblong protuberance, or as small, round holes. In watching more closely the orifice of either of the ureters for some time, I have easily been able to see how the urine entered the bladder at intervals of from thirty to sixty seconds. I have been enabled to do so by the whirls which the urine—viz., a solution of salts—produced in the water that had been injected into the bladder. We can see the same arise at any time when we pour urine into a test-tube filled with water. On the same occasion I observed quite an interesting physiological phenomenon, which is not mentioned, as far as I have seen, in any one of our hand-books on physiology. You all know that the urine enters the bladder at intervals with a rush, and so much so that it forms a real little fountain when the bladder is filled with air, or opened by incision. The urine is pressed forward, first, by the *vis a tergo ;* second, by the difference in pressure between the pelvis of the kidney and the cavity of the bladder; and, third, by the peristaltic contractions of the ureteric muscles. Now, as there are in the wall of the ureter more muscular fibers running longitudinally than transversely,* the orifice of the ureter, and with it the elevation of the mucous membrane in which it ends, is drawn *inward* at the end of each conveyance of urine into the bladder, the orifice and its nearest adjacent parts then taking the shape of a funnel. After a few seconds it returns to its former position. That this occurs each time and is a physiological phenomenon I have fully convinced myself in two cases.

Now, what is the advance in the knowledge of the different diseases of the bladder which cystoscopy has accomplished, in addition to what we learn by the examination of the urine and of the interior of the bladder by means of sounds and the combined rectal palpation?

First, we are able to decide with absolute certainty whether the bladder is healthy or morbid.

Every one of you, gentlemen, who has been unable to make out in a certain case of urinary trouble the location of the disease, after a very careful chemical and microscopical analysis of the urine, and exhausting all the older methods of examination, will appreciate the great value of such a surety.

"The negative result is here fully equivalent to the positive one." For, if it is proved that the seat of the disease is *not* in the bladder, then it must be looked for somewhere else, especially in the upper urinary passages, most probably in the kidneys.

The importance of this fact—namely, to be able to decide whether the bladder is healthy or morbid—for a diagnosis *per exclusionem* is evident. Only a few days ago I had an interesting experience in that respect. A young man, twenty-five years of age, was sent to me by a colleague for cystoscopy on account of an obscure trouble of his urinary system. The patient had had gonorrhœa twice, the last time fifteen months ago. It was complicated with catarrh of the neck of the bladder. Lately he had been treated with local applications, made with the help of the endoscope; but he never was relieved. For about seven months there had been a constant painful feeling of pressure in the region of the bladder, sometimes retention for a whole day, sudden stop in the flow of urine, and no relief when the bladder was emptied. Now and then the last few drops were mixed with blood. No symptoms of catarrh, no tenesmus. The urine contained a trace of albumin. Specific gravity, 1·016. The patient was a good deal emaciated, unable to work, and depressed. The early history revealed that he had masturbated more or less for many years when he was a boy.

On inspecting the cavity of the bladder with the cystoscope, I could only detect a very dense network of enlarged small blood-vessels, "a marked hyperæmia" of the trigonum Lieutaudii; everything else was in a perfectly normal condition.

Whether this hyperæmia, undoubtedly a continuation of the catarrh of the neck of the bladder, is the cause of all trouble, I don't venture to decide. Perhaps it is. If so, one or more instillations of a few drops of a five- or ten-per cent. solution of nitrate of silver into the trigonum and neck of the bladder should bring some change for the better. Should this not happen, the symptoms must be looked at as dependent upon a nervous origin, either reflex spasm of the sphincter or paresis of the detrusor muscle. Certainly the formerly obscure disease, and the way of its treatment, has thus been materially cleared up by the cystoscopic examination.

Can we prove now with the cystoscope which kidney is diseased? It seems that we may perhaps be able to do this in future, when we have sufficiently learned to see and to manipulate inside of the bladder after the cystoscope has been introduced. Either we could attempt, according to Nitze, to push a very thin catheter (introduced alongside the cystoscope into the bladder), under the guide of our eyes, into one of the orifices of the ureters—provided they have been found at all—and draw the urine directly from the kidney, or we might be able to observe out of which ureter the blood escaped, for instance, in a case of hæmaturia. Many a time the blood has been seen flowing from an injured papilla of a tumor of the bladder that was examined with the cystoscope.

Looking over the well-known diseases of the bladder, we shall be able, first of all in *catarrh,* to make a strict differential diagnosis between the different forms—acute, chronic, hæmorrhagic, diphtheritic—and probably learn to diagnosticate *in the picture* those differing in ætiological respects, especially the tuberculous one. It will be very easy to see ulcerations. Diverticula are very exactly demonstrated. Even in 1883 Sir Henry Thompson maintained that their presence could not be proved *in vivo* in the majority of cases.

Foreign bodies not to be detected by the sound, even in the hands of a well-experienced surgeon, may not only be seen, but localized.

A very interesting case of this kind was published by Nicoladoni* two years ago. Most of you have read it in the journals. In a lad eighteen years of age, who had introduced a medium-sized pin, head forward, into his urethra nine days before, he saw, by means of the old-shaped cystoscope, the pin fixed in the right part of the anterior wall close to the vertex after he had tried in vain to detect it with the probe. The pin cast a shadow on the opposite wall of the bladder. In the same year v. Dittel † saw a piece of sealing-wax, covered with salts, in the bladder.

In 1884 Fillenbaum ‡ found in the bladder of a fifty-four year-old tabetic patient, who catheterized himself, the broken piece of a Nélaton catheter with the cystoscope. Grünfeld's endoscope, that was tried first, gave a negative result.

Last year Nitze # diagnosticated in the wall of the bladder of a woman a silk ligature, and removed it with the help of his cystoscope. Martin, of Berlin, had performed

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* Ranke, "Grundzüge d. Physiol.," 1875, p. 496.

* "Wiener med. Wochenschr.," 1886, 7, 8. † *Ibid.*, p. 793.

‡ "Deutsche Zeitschr. f. Chirurgie," vol. xx, p. 453.

Langenbeck's "Archiv," vol. xxxvi, 3, p. 680.

ovariotomy on her a short time before, and ligated the pedicle and vessels with silk. Some of the ligatures caused an intraperitoneal abscess that perforated into the bladder.

It seems almost unnecessary to mention that we can plainly see stones in the bladder, make out their size, shape, and mobility, and percuss them with the beak of the cystoscope by the guidance of our eyes. (Those gentlemen who take interest in the matter may try this afterward on the phantom.) Cystoscopy is of special importance for the diagnosis of encysted stones.

Allow me, Mr. Chairman, to give here the short history of a case of stone in the bladder that recently occurred in my private practice, and had passed through the hands of a number of doctors of this city. It shows the predominant place we must accord to cystoscopy in the diagnosis of obscure diseases of the urinary system: L. T., aged twenty three years. First gonorrhœic infection two years ago; second, last year. Complications with prostatitis, catarrh of the neck, afterward of the whole bladder; symptoms of stricture. The necessary treatment was ordered and the bladder washed for eight months. No material benefit. In the course of treatment, about seven months ago, a marked chill of ten minutes' duration set in, with pains in the right lumbar region. Since that day there has been a large amount of pus in the urine, sometimes the sixth of the whole quantity. Soon a good deal of albumin was found, and, the diagnosis being made as pyelonephritis ascendens, the prognosis, of course, was very doubtful. In the beginning of February the patient came to my office. I found stricture of the pendulous and membranous portion of the urethra, large prostate, painful on pressure, and urine with a large amount of pus and mucus, very few cells, resembling those of the pelvis of the kidney, prostate corpuscles. No pain in urinating, no blood, no sudden stop in the flow of urine. The patient being opposed to any direct surgical interference, I had to content myself with widening his strictures by the introduction of steel sounds and with internal treatment, keeping in view internal urethrotomy and drainage of the bladder, or, as soon as it could be diagnosticated whether both kidneys were affected or only one, nephrotomy. A careful examination of the bladder revealed nothing at all, the same result the other colleagues had had before me. At that time I received Leiter's cystoscope, and at once resolved to look into this bladder. Without any difficulty I saw there two dark-brown, even stones, of the size of a hazelnut, lying in the groove behind the swollen prostate. With the beak of the instrument I succeeded in throwing them out into the fundus, where I could easily percuss them, finding them very hard. A large, snow-white piece of coagulated mucus was lying at their side, its slender, dentritic ramifications floating in the fluid. The mucous membrane of the bladder was more or less healthy. Only here and there I saw a purple-colored spot with an adherent flake of mucus. I further discovered the mouth of the ureters without any difficulty, and could plainly perceive how whirls originated there that permanently set in motion the whole injected fluid. I was not yet able to make out whether the urine in entering the bladder was clear or muddy. But as the injected water, at first perfectly transparent, became opaque in a few minutes, I could conclude that the pus most probably descended from one kidney or both. Thus far the patient, who feels otherwise very well, has not consented to the proposed removal of the stones. Meanwhile I have had the pleasure of demonstrating them to Dr. A. G. Gerster, who also saw them very distinctly.

Returning to our subject, lastly, let us see in which way the treatment of *tumors of the bladder*—this favorite child of modern surgery of the bladder—has been benefited by cystoscopy. One word will say *how* we did and shall advance here, too, "early diagnosis." If the cystoscope had brought nothing else than this, it would be enough. What prevents our patients on whom we have operated for tumor of the bladder from enjoying the benefit of the removal of the new growth for many years still, to-day, where technique and after-treatment have been so greatly improved, is not the operation itself, epicystotomy or median section. It is pyelonephritis, produced by the long-continued disease of the bladder. As long as we drain the bladder after the operation (by Trendelenburg's T-tube in open-wound treatment, or a permanent catheter after having closed the wound of the bladder by suture), we also drain the pelvis of the kidney. Every drop of urine that enters the bladder from above will leave it immediately by way of the tubes. Reflux is impossible. Of course, the uncomplicated pyelitis will get better under this treatment, as well as the chronic catarrh of the bladder; both even may get cured by prolonged drainage. But, unfortunately, nephritis is so often combined with pyelitis. Pyelonephritis can *only improve*. A "*restitutio ad integrum*" by draining the bladder would be an exceptional case. To cure it we should have to add nephrotomy, and even that sometimes without permanent success, or, if the diagnosis of a unilateral affection has been made, nephrectomy.

I, too, had to have this experience in the case of a patient, fifty-three years of age, in whom I extirpated a villous growth (papilloma) by epicystotomy in October, 1886. It had the size of an apple, and had troubled the patient for several years. He was entirely relieved of all his troubles, was well last summer and able to work, and enjoyed his life. He could easily retain the urine for three hours and more, and passed the water in a strong spurt. But by and by the quantity of albumin in the urine, that had never fully disappeared, increased, the old nephritis that had slumbered for several months made progress, without a recurrence of the chills that had frequently set in before the operation, caused by the cystic pyelitis. A few weeks ago the urine contained about one third of its volume of albumin. The patient is now unable to work, and will certainly die in a short time. If he could have been examined with the cystoscope two years ago, at the time of the first spontaneous hæmaturia, before he came under my attendance, and if with the cystoscope the diagnosis had *then* been made and the small new growth removed, the patient would probably now be cured.

That cystoscopy will enable us to diagnosticate tumors of the bladder *early* is certainly a progress that can not be overestimated. It will now become the duty of the attending physician to take care that the cystoscope is introduced into the bladder of a patient who is attacked with hæmaturia of short duration without any warning. He will no longer satisfy himself and the patient with the diagnosis so much in favor—"hæmorrhoids of the bladder."

Of course, we shall try to find out the size, location, and manner of insertion, whether the tumor has a pedicle or a broad base. V. Bergmann was enabled, in performing epicystotomy for tumor, not to incise the site of insertion, and consequently to avoid a serious hæmorrhage, having, with Dr. Nitze, localized the growth before by endoscopical examination. Nitze reports in his essay sixteen cases of tumor of the bladder (Nitze 8, Schustler 7, Nicoladoni 1) in which the diagnosis had been made or confirmed with the cystoscope. As Dr. Nitze writes me last week, he has diagnosticated seven more of them with his instrument since his last publication. Six of them were operated on. The diagnosis in regard to size, localization, etc., was sustained by the operations in every particular.

But the cystoscope will often have to reveal the secret hidden in the bladder, not only in recent cases, but also in an advanced stage, of tumor, when the other diagnostic means have failed. It is well known that often in a case of tumor of the bladder nothing can be found in the urine except blood and the evidences of catarrh, that examination with sounds and the combined rectal palpation give no positive result, and that we do not always succeed in tearing off small pieces for microscopical examination. Besides, such particles have caused grave errors when examined. Cases of Czerny's, Küster's, and Tuchmann's demonstrate this possibility.

It need not be mentioned that we shall not depend upon the result of cystoscopy alone. In some instances it will undoubtedly be very difficult to make with its help the differential diagnosis between a new growth that covers a large spot and chronic circumscribed catarrh of the bladder. We rather ought to compare the result gained by ocular inspection of the vesical cavity with those achieved by other methods, judge by all, and then only operate.

Let us see finally, Mr. Chairman and gentlemen, how much the *treatment* of diseases of the bladder has profited by the more exact diagnoses made with the cystoscope. A very great deal! The catarrh in its variations will undergo different treatment; ulcerations of the wall of the bladder will be attacked with the knife, those of tubercular character, according to Schatz, radically extirpated, the wall of the bladder included. Diverticula could be washed with catheters of a special curvature, as Nitze proposes, but has not yet tried. Their presence would require a very careful distension of the bladder for the suprapubic incision. We know that rupture of the bladder especially takes place at a diverticulum with thin walls. Foreign bodies can not only be diagnosticated, as mentioned above, but plainly localized, and therefore removed with absolute certainty by one of the methods. In regard to lithiasis, cystoscopy will again intensify the international discussion, going on for about five years, on "which is the best method of operating"—whether by epicystotomy or median section, or by lithotripsy or litholapaxy. The main reproach to litholapaxy, the frequent and early recurrence of the old trouble, has lost its foundation, as we are now enabled to inspect the interior of the bladder and to crush and evacuate as long as there are fragments to be seen. When this is accomplished the patient will be cured in the simplest and quickest manner. On account of this possibility, Nitze predicts for the crushing method a due and firm place among the different operations for stone in the bladder. How far this will be realized we must wait to see. It has been mentioned above that encysted stones will be seen. The possibility of their removal is thereby materially increased.

The vital statistics of tumor of the bladder will be greatly improved by the early diagnosis. To remove small benign polypi, Nitze proposes not to incise the bladder, but to crush the growths, when localized, with a long forceps, introduced *per urethram*, and then to evacuate them. We can only agree with him when he says that a strong and healthy patient who passes blood, pure or mixed with urine, for a few days will more readily submit to cystoscopy and tearing or crushing of the tumor than to a more serious operation. Whether that will be realized, we again must wait to see. At all events, it seems to be easier to destroy a polypus floating in the fluid and having an insertion known to us than to perform median section and grasp the growth within the empty organ by the aid of digital exploration, as recommended by Thompson. Large and infiltrating neoplasmata will belong, as formerly, to the suprapubic incision.

It is evident, Mr. Chairman, that the advance in the diagnosis and treatment of diseases of the bladder, as described by me, is not so easily, and especially not so quickly, made. No, cystoscopy not only wants to be thoroughly studied in regard to technique, but has to be investigated yet in many respects. "Now, being enabled to inspect the morbid bladder with the help of brilliant illumination in the living subject, the characteristic pictures of different pathological alterations will have to be studied in the same manner as it was necessary to do and was done in regard to the larynx and the eye when the laryngoscope and the ophthalmoscope were invented." "When the cystoscopy of to-day," says Nitze, "is of the same age as, for instance, laryngoscopy, that has been diligently and enthusiastically cultivated and improved by generations, then it will have, beyond any doubt, an equal, perhaps even a greater, surety in the diagnosis of pathological conditions of the bladder."

Although I am not able to-day, Mr. Chairman and gentlemen, to let you inspect the diseased bladder of a living subject, I sincerely hope that the instrument that allows us to do this in such a simple and handy way is sufficiently interesting to justify me in its demonstration and a short discussion of the new branch of surgical diagnostics created by it—cystoscopy.

THE SYMPTOMS, DIAGNOSIS, AND TREATMENT OF PNEUMONIA IN CHILDREN.*

By DAVID PHILLIPS, M. D.

Probably in no disease to which children are subject does the physician meet with so many difficulties in making a diagnosis, or is so liable to be led into error, as in certain cases of pneumonia. When we consider how insidiously at times pneumonia commences, how great a resemblance to other diseases it frequently bears, the difficulty, and sometimes impossibility, of obtaining physical signs, especially at its commencement, and, if obtained, to determine whether they represent pneumonia or not—we realize that the physician needs to exercise a high degree of care in order to formulate a correct diagnosis.

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* Read before the Thirteenth District (Yorkville) Branch of the New York County Medical Association, March 15, 1888.

It is the object of this paper to present such a description of the symptoms and diagnosis of this disease as will enable the physician to suspect its existence from its commencement even without the evidence of the physical signs. With this purpose the writer has divided the case into classes according to their rational symptoms, giving under each class the differential diagnosis between it and the disease for which it might be mistaken.

Class First.—In this class of cases the disease is sometimes preceded by malaise or symptoms of slight catarrh, but it generally commences abruptly. The child seldom has a distinct chill, but complains of a sensation of chilliness. In the infant, convulsions may occur in place of the chill, the temperature rises quickly, the pulse becomes full and bounding, pain is generally complained of in the thorax, and sometimes in the abdomen, but is seldom of a severe character. There is a dry hacking cough which occurs at intervals, and becomes somewhat looser as the disease progresses. There is loss of appetite but great thirst, and generally constipation, while the urine is deficient in chlorides. The breathing becomes rapid, the inspiration occurs suddenly before the expiration is complete. The alæ nasi are dilated at each inspiration, and there is moaning expiration. The child lies with its mouth open, in fact, breathes mostly through its mouth, and the nursing infant can only nurse for a few minutes at a time on account of its inability to breathe while nursing. Some even can not nurse at all, and have to be fed with a spoon. The tongue is dry, white, and furred in the center, and red at the tip and edges. The child is restless and peevish, and desires frequent change of position. The axillary temperature is from 103° to 105°, averaging 104°; respiration from 30 to 50, and in severe cases it may reach 80 or more; pulse from 130 to 150. Herpes labialis may appear. The intensity of the pulse and respiration is greatest on the fourth or fifth day. The disease generally terminates on the sixth or seventh day. In the second stage the child no longer wishes to be moved, and lies in a more or less drowsy condition. The bright flush of the complexion and the red tint of the lips are gone, and the face appears swollen, pale, and anxious. The extremities may be cool or cold while the trunk has a temperature of 104° or 105°, and the respirations may number nearly half of the pulse-beats. This condition is generally found about the third or fourth day. The last stage is announced by an almost uncountable fluttering pulse, and a sweaty, clammy skin. The respiration becomes irregular, several short and hurried inspirations being followed by one or two deeper and at longer intervals. The voice is lost, the child speaking in a whisper. As the fatal issue approaches the child lies in a state of stupor, the lips and fingers become dusky, the temperature falls, and the pulse is gradually extinguished. In some cases death is preceded by convulsions followed by coma.

In broncho-pneumonia, which is generally a secondary affection, the dyspnœa and duskiness of the complexion are generally more marked from the outset of the disease, and the fever is not so high as in the croupous variety. The irregularity of respiration comes on earlier, and râles are heard in both lungs. The inspiratory murmur, instead of being full and expansive, as in a healthy child, is short, obscure, and almost without the vesicular murmur. The expiration is rarely distinct unless the bronchial respiration is fully developed (Condie). The presence of physical signs depends upon whether the amount of lung involved is sufficient to prevent the intervening air-containing parenchyma from masking the signs of consolidation; otherwise there are no physical signs except râles. The average duration of broncho-pneumonia is fifteen days (Gerhardt). In very young infants febrile reaction rarely, if ever, occurs, the pulse is small and obscure, the skin cold and livid, and the limbs are liable to be œdematous. The cry is incomplete and almost always smothered, becoming clear for a moment, but returning afterward to its altered tone (Billard). The respirations are very rapid. In many cases extremely few or no râles are present despite the existence of severe dyspnœa. Percussion may be normal. Diarrhœa and vomiting may be present.

The physical signs generally present in pneumonia are crepitant or sub-crepitant râles, a feeling of greater solidity below than above the scapula, which can be perceived before the ear can detect actual dullness (West), dullness on percussion, bronchophony, bronchial breathing, and increased vocal fremitus. The crepitant râle is very difficult to detect in the young child, and increased vocal fremitus, though a sign of great diagnostic value, is rarely obtainable in a child which has not reached its second year. If the whole lung is consolidated there will be absence of both bronchophony and bronchial breathing. Dullness may be obtained in the healthy child if the force used be great, so that in making percussion very little force should be used.

In many cases bronchial breathing in the child differs from that heard in the adult, it being feeble and indistinct, and more like a rough respiration.

Diagnosis.—Most of the rational symptoms present in pneumonia may be present in pleurisy, and where the physical signs are not well marked the diagnosis becomes quite difficult. In very young infants it may be made by the fact that pleurisy commences with violent and continual screaming, the head is thrown back, and there is great apparent pain when placing the child erect. The working of the alæ nasi is also rare in pleurisy, and the child breathes as if holding its chest on account of the pain. West says it may be laid down as a rule, subject to few exceptions, that whenever a child is suddenly seized with symptoms which, while they indicate some affection of the lungs, are yet unattended with the auscultatory signs of pneumonia, and, while it bears percussion on one side of the chest, it cries and struggles on the slightest attempt at percussion on the other, the disease from which it is suffering is pleurisy. The only certain physical sign in the child is displacement of the heart, and if this occurs and is thought to be due to some other cause, an aspirating needle may be introduced into the chest; but *care* should be taken that it does not enter more than half an inch. Of course, in ordinary cases of pleurisy we would get fluctuation in dullness by the movements of the child, enlargement of the side, etc.; but it is singular how little difference there may be between the two sides in some cases, and if the pleura is full there will be no fluctuating level, while the absence of bronchial voice and breathing would occur both in this condition and in pneumonia of the whole lung.

Pneumonia may be diagnosticated from bronchitis by the expiratory moan and physical signs, but if both of these be absent, by a comparison of the pulse with the respiration. In health the pulse is to the respiration about as 4 to 1, in pleurisy and bronchitis rarely more than 3 to 1, while in pneumonia they are frequently from 2½ to 2 to 1. Henoch says 40 to 50 respirations a minute in young children indicate that the inflammation is situated in the large and medium-sized tubes, while above this the indication is that the smaller tubes are affected. In all doubtful cases of pneumonia the urine should be examined, as the absence of chlorides is a decisive sign.

Class Second—Cases which at their commencement resemble remittent and typhoid fevers.—In this class of cases the disease commences abruptly, generally at night, the child awaking out of sleep with an attack like acute indigestion. There are nausea, vomiting and purging, a rapid pulse, flushed face, and some fever. The next day the child feels tired and does not wish to be moved or spoken to, and complains of severe frontal headache. The pulse is from 120 to 130, and the temperature (axillary) 103° or 104°. There is generally no more vomiting, but the bowels may move once or twice during the day. On the third day a slight, hacking cough appears, but the child complains of nothing except the severe pain in the head and a languid, tired feeling. The temperature is generally 104° or over, and the pulse rapid and bounding. Examination of the chest either gives negative results, or at the most shows diminished vesicular breathing in the affected portion. The physical signs may continue latent for from four to six days. In a number of these cases I have noticed that there is a daily fall of temperature between 4 and 6 a. m., sometimes amounting to as much as two degrees. This is especially noticeable during the first two days. In some cases, in addition to the symptoms already stated, there is pain referred to the abdomen, with evident increase of discomfort on pressure. The tongue is red and disposed to be dry, diarrhœa is present, and the child, if old enough, talks in its sleep and may be slightly delirious.

The diagnosis in these cases can not, of course, be made with certainty until the physical signs appear, but it may be inferred from the fact that remittent and typhoid fevers rarely commence so abruptly, nor is the temperature in them apt to be so high from the start; and, *further*, the respiration in these cases of pneumonia is more hurried in comparison to the pulse. If the expiratory moan be present the inference is made more certain. The duration of these cases is generally a little longer than ordinary cases, they lasting nine days.

Class Third.—In these cases the attack sets in with nervous symptoms. There is considerable agitation, with muscular tremors, somnolence, delirium, dark-red face, glistening eyes. Or it may set in with convulsions. The child goes into a condition of apathy almost from the start. The cough may be short or altogether suppressed. The hurried breathing may be referred to the supposed brain trouble, or, if it directs attention to the lungs, auscultation may give negative results. In addition to these symptoms there may be vomiting, pain in the head, restless nights, talking in the sleep, constipation, and the head held back on the spine, while convulsions may occur several days before the patient's death. Even when auscultation will not help us the diagnosis may be made in these cases—first, from the extreme high temperature from the outset and its steady continuance; second, by the great and hurried acceleration of breathing, which is unlike the irregular and uneven respirations of acute brain disease; third, by the great frequency of the pulse and its regularity; fourth, by the absence of persistent nausea and vomiting.

I might add another class of cases in which the pneumonia is insidious and chronic in its course, and which occur during the diarrhœal diseases of children, and especially in the teething child, and are accompanied by vague nervous symptoms, general wasting, tumid abdomen, etc., and in which the cough is apt to be slight.

Prognosis.—Croupous pneumonia between the ages of four and thirteen is rarely fatal,* but in the infant is a very serious disease. Lobular pneumonia is more fatal than the lobar variety. Unfavorable symptoms are the existence of bronchial breathing after the eighth day, the appearance of pemphigus on the face or body (Smith), swelling of the veins of the hand (Trousseau), and an open mouth, with its angle drawn downward and outward (Ellis). The first favorable sign is a diminution in the number of respirations.

Treatment.—Probably in no disease to which children are subject does the physician require to use greater judgment than in pneumonia. While some cases require but the simplest medication, others will tax the resources of our profession to the utmost.

Some writers say that an emetic at the outset will abort or modify the disease. I try to abort it by the administration of quinine and calomel, and believe I have been successful in a certain number of cases. I have found that the result of this treatment resembles in its effects the result of a large dose of quinine when given to break up a commencing cold in the head in an adult. Some patients will be improved the next day, while others, after improving for twenty-four hours, have a return of the symptoms, and still others seem not to be affected. Perhaps pilocarpine may prove more successful, but I have never ventured to use it in the treatment of this disease. The abortive treatment by calomel and quinine can do no harm even if it does no good. I give, on the appearance of the first symptoms, a dose of calomel by the mouth, and a full dose of quinine in a suppository by the rectum, repeating the quinine in about ten hours. If this treatment proves unsuccessful, I commence the regular treatment of the disease, being guided by the symptoms, strength of the patient, and variety of the disease. For the first few days, or until consolidation is well advanced, the patient should always be kept in a semi-recumbent position, or, if carried in the arms, the position changed from time to time. This not only renders respiration easier, but prevents that very common occurrence in children—the stasis of fluids in the posterior portion of the lung, and may consequently limit the amount of solidification. In croupous pneumonia the child's chest should be enveloped in cotton batting, covered with oiled silk. Personally, I have no faith in the water girdle or in vesication. If there is much pain in the side, the application of a mixture of equal parts of chloroform and tincture of aconite on a piece of cotton of the size of a quarter of a dollar, held on for a few minutes at a time, will give great relief, and is all that is generally required. If the pain is very bad and the child is strong, the application of one leech may be resorted to; but never blister, as the irritation to the nervous system which ensues at the time and subsequently only does harm. In broncho-pneumonia the application of flaxseed poultices, sprinkled slightly with mustard, is required, and they should be applied both in front and behind, being changed every three or four hours. These poultices should be continued until the skin becomes covered with an eruption; then an oil-silk jacket should be used. The poultices may be repeated from time to time, if deemed necessary. When the child is robust, the symptoms mild, and the fever not very high, the best treatment is the administration of from eight to ten grains of quinine a day. If the fever is high and the pulse bounding, aconite should be added, the pulse being carefully watched during its administration. In my opinion, there is no medicine which works so admirably as aconite in the pneumonia of childhood, if given at the right time. In administering it, the condition of the pulse should always be the guide. In other cases the treatment may be commenced by a mixture consisting of liquor ammonii acetatis, syrupus ipecacuanhæ, and spiritus ætheris nitrosi. As the second stage approaches, the treatment should be slightly changed. The aconite should be stopped, and carbonate of ammonium and, perhaps, syrup of senega added to the treatment, depending upon how the child is withstanding the disease. Stimulants may be necessary at this stage. The treatment of the third stage consists in the administration of digitalis, camphor, musk, and stimulants at frequent intervals. In broncho-pneumonia, without regard to the strength of the child, I commence from the outset the administration of the stimulating expectorants—carbonate of ammonium and quinine—and, if the child will not take the quinine by the mouth, I give it by the rectum three times a day. It appears to me to work just as well as when given by the mouth. When the child is cyanotic, and presents symptoms of suffocation, I have obtained the best results by the administration of an emetic, followed by a steam bath and the use of camphor and stimulants. In cases where there are marked nervous symptoms, which are probably due to the condition of the circulatory apparatus, the right heart being engorged, the venous system full, and the capillaries dilated, camphor, digitalis, and moderate stimulation give the best results. Where the body is covered with perspiration or the extremities are cold, digitalis is indicated. If the bowels are constipated, calomel may be given every third day. The lowering of temperature which follows its administration is remarkable in many cases. If diarrhœa is present it should be stopped at once.

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* It appears to me that, in health, children between these ages do not use the full powers of their lungs in breathing, and consequently bear the crippling of a small portion of a lung without very much discomfort.

As regards fever in the pneumonia of children, it is surprising how well they withstand it, many of them bearing a temperature of 104° for days without marked inconvenience. As a rule, it is better to leave the fever alone; but if it is thought necessary to reduce it, give full doses of quinine. Do not use antipyrine or acetanilide, as they are too dangerous remedies to give to children suffering from pneumonia. Salicylate of sodium may be used if it is preferred, one grain for each year of the child's age being given every two hours. I, however, use quinine by the rectum in doses of from four to ten grains. Generally two doses during the twenty-four hours are sufficient, the last dose being given about midnight; but it may be administered oftener if necessary. It usually takes four hours before its effects on the temperature are manifest, and in some cases no effect is produced until two or three doses have been given, after which two doses a day will be found sufficient. The following abstract will show its action:

L. L., aged thirty months, suffering from pneumonia. Temperature reached 104·5° (axillary) at 1 P. M., December 20th, when a suppository of six grains of quinine was given. At 3 P. M. temperature 105°; 5 P. M., 103°; 8 P. M., 101·5°; 11 P. M., 102·7°. Suppository given, 1 A. M., December 21st, 103°; 7.15 A. M., 100·5°; 1.30 P. M., 102·5°. Suppository given, 3.40 P. M., 100·5°; 6.30 P. M., 100°; 8.30 P. M., 100·5°; 7 A. M., December 22d, 101·5°; 10 A. M., 102°; 12 M., 103°. Suppository given, 2.20 P. M., 102·5°; 4.30 P. M., 100·5°; 8.30 P. M., 98°. The temperature after this did not need any further treatment, the disease terminating December 24th.

I have thus briefly endeavored to call attention to the points to which our treatment should be directed, but I can not close without again referring to the value of camphor in relieving the nervous condition and rapid respiration, and to the value of the steam bath * in cyanotic conditions and when the right heart is greatly engorged. I believe that to a certain extent it takes the place of bloodletting in the adult in the same condition; and, although it may be thought to be taking a step backward to recommend it, I know of no treatment of the adult, when the respirations are hurried and panting, the face almost black, and the right heart engorged with blood, that gives greater relief than the abstraction of a few ounces of blood from the arm, followed by the administration of digitalis and stimulants.

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* I use a kettle of boiling water on the stove and a rubber pipe running from its nozzle under the bedclothes, so that the child's body is enveloped in steam.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, APRIL 21, 1888.

THE DEATH-RATE OF NEW YORK COMPARED WITH THAT OF LONDON.

Dr. Roger S. Tracy, the Registrar of the New York Board of Health, has made an analytical study of the mortality returns of London and New York, for the purpose of ascertaining if the disparity in the rates (about 20 in 1,000 in London, and about 26 in 1,000 in New York) is due to any particular diseases, and, if it is, to what diseases, also whether or not the mortality from those diseases has increased or diminished during the twenty-two years that New York has now been under the government, in so far as sanitation is concerned, of a board of health. Dr. Tracy's report is dated April 9th, and it is addressed to Colonel Clark, the secretary of the board.

The report gives the population of New York as 1,439,037, and that of London as 4,149,533. Using this ratio as a basis, Dr. Tracy compares the number of deaths in the year 1886 from the principal causes (from 80 to 90 per cent. of the total mortality) in the two cities, by means of a table comprising five columns of figures. The first column shows the actual number of deaths in New York; the second, the same amplified to waht it would be at the same rate if the population were equal to that of London; the third, the actual number of deaths in London; the fourth, the excess of deaths in New York; and the fifth, the excess of deaths in London. The causes of death in excess in New York are small-pox, scarlet fever, diphtheria, croup, typhus, typhoid fever, cerebro-spinal meningitis, puerperal diseases, malarial fevers, diarrhœal diseases, erysipelas, alcoholism, phthisis, pneumonia, tabes mesenterica, tubercular meningitis, meningitis, sunstroke, cirrhosis and hepatitis, Bright's disease and nephritis, cyanosis and atelectasis pulmonum, suicide, premature birth, drowning, and violence; and those in excess in London are measles, whooping-cough, rheumatism and gout, cancer, bronchitis, heart diseases, aneurysm, convulsions, apoplexy, and diseases of the brain and nervous system. It is explained that in the New York returns tabes mesenterica includes scrofula and marasmus, and tubercular meningitis includes hydrocephalus; also that broncho-pneumonia is generally returned as bronchitis in London and as pneumonia in New York. Other tables arranged in like manner are given, covering the last census year, 1880, and the period of twenty years from 1867 to 1886. In the last-mentioned table we find an excess recorded in New York from scarlet fever, typhoid fever, diphtheria, croup, diarrhœal diseases, erysipelas, tabes mesenterica, tubercular meningitis, phthisis, premature birth, diseases of the brain and nervous system, pneumonia, and diseases of the urinary apparatus; and in London from small-pox, measles, typhus, whooping-cough, rheumatism, cancer, senility, diseases of the circulatory system, and bronchitis. The average annual mortality of London for the twenty years was 79,109, and that of New York, amplified as above explained (the actual being 30,487), was 102,780, being an excess of 23,671.

Dr. Tracy finds that the disparity between the two cities is owing to the excessive number of deaths in New York from diphtheria and croup, diarrhœal diseases, consumption, and kidney diseases; if the rates of mortality from these diseases were the same in the two cities, the deaths from all other causes remaining as at present, the general death-rate in the two cities would be almost precisely the same. It will be seen that most of the diseases to which, as it thus appears, New York owes its excessive mortality are those in the prevention of which sanitation is generally expected to accomplish much. It is therefore gratifying to observe that Dr. Tracy is able to report a diminished death-rate from several of them—diarrhœal diseases and consumption—during the twenty years; but, unfortunately, he also finds himself constrained to record an increase of that from diphtheria (including croup) and kidney diseases. Diphtheria is one of the diseases against which sanitation is most vigorously plied, and we may be sure that the board will not rest easy until it has added that scourge to the list of those that its efforts have been able to moderate.

The overcrowding of the population in New York (where in 1880 there were 16·37 persons to a dwelling, while in London there were only 7·8) and its trying climatic conditions lead Dr. Tracy to think it very improbable that its death-rate can ever be reduced to that of London. In that he is probably correct, but, still, there is reasonable ground for expecting a reduction in the disparity, although not perhaps in any decided degree so long as New York contains a suburban element at only one end, being elsewhere confined between two rivers as in a strait-jacket, while London is free to spread itself out in every direction; nor so long as persons obviously far on in the journey to the grave are brought hither from all parts of Europe in such numbers as is the case at present. At all events, the board of health is to be commended for having so honestly reviewed the history of its own achievements and failures, and to be congratulated on the possession of an officer so competent to carry out the review as Dr. Tracy.

A PARIS DOCTOR'S TRIBULATION.

It is doubtful if in any part of the world doctors' premises are quite exempt from the visits of bores. In this country certainly we suffer in our full proportion, but thus far we have been spared the importunities of the watering-place doctor, and that is no mean compensation for the undeveloped state of hydrology, balneology, etc., in the United States. Some idea of what we thus escape may be formed from an amusing sketch given in a book recently announced in Paris, entitled "Scènes de la vie médicale," an extract from which constitutes the *feuilleton* of two consecutive issues of the "Union médicale."

The passage recounts, perhaps with some exaggeration, how one Dr. Bitourou, of the *boulevard des Batignolles*, was tormented on a certain day in the month of April. His first visitor was Dr. Tartini, consulting physician at Veyrac, who, although, as he announced, not having the honor of being known to Bitourou, had called to ask that gentleman to send patients to Veyrac. Bitourou politely promised that he would not forget Veyrac, in case a course of its waters seemed to be indicated for any of his patients; whereupon Tartini declared that, inasmuch as the indications were so numerous, he felt sure of receiving several patients from his Paris *confrère* in the course of the season. It was, of course, unnecessary to recount these indications, but he mentioned among the morbid conditions in which the Veyrac waters were beneficial all varieties of dyspepsia, chlorosis, anæmia, gout, diabetes, affections of the liver, the bladder, and the kidneys, intestinal obstructions, obesity, herpetism, and arthritism, and added that there were many others that escaped his memory for the moment. He thanked Bitourou for a qualified promise to send him a certain dyspeptic whose case was proving rebellious, and announced his intention of sending him a copy of his "Treatise on Fractures." To a question implying surprise he replied that it had occurred to him to write a monograph on that subject because it was a part of current practice. "Such cases are met with every day," he remarked, "and a practitioner like you must be very glad to have at hand a conscientious guide to their management, well up in the latest advances of science."

Tartini having departed, two more bath doctors are announced simultaneously: Dr. Lescourbiac, consulting physician at the Aiguecaude hot springs, and Dr. Ruelle, ex-physician-inspector of the Frédefons waters. The latter explains that he puts *ex-médecin-inspecteur* on his cards for the purpose of airing a grievance, the government having done him a bad turn, but declares that he is now more of a fixture at Frédefons than before. Being asked the reason of the marvelous qualities of the Frédefons waters, he attributes their superiority to the fact that each litre contains from two to three tenths of a milligramme of uranium, a substance which, even in such minute quantities, is endowed by the "living water" with tenfold and perhaps a hundredfold "dynamic potency," has an elective affinity for all the abdominal organs, acts as a vaso-constrictor on the portal circulation, regulates the action of the thoracic organs, and consequently . . . .

But, amusing as poor Bitourou's interviews are with his other visitors, we must content ourselves with the mere mention that they are two in number, making in all five balneologists that called on him in one afternoon. Reflecting that, as the exploiter of uranium has told him, there are between three hundred and three hundred and fifty mineral-water stations in France, he computes that a short visit by a representative of each of them would make his afternoons lively for some time to come. He comforts himself with the thought that his visitors have been of good appearance, and that they will pass among the others in waiting, as well as with his *concierge*, for choice patients.

MINOR PARAGRAPHS.

THE NEW NOMINEE FOR THE HEALTH OFFICERSHIP OF THE PORT.

Dr. Edward C. W. O'Brien, of Buffalo, having been nominated by the Governor for the office of Health Officer of the Port of New York, it is, in our opinion, earnestly to be hoped that the Senate will confirm the nomination. In the matter of the political antagonism that has for so long a time defeated the confirmation of a new officer, this Journal has no preferences whatever, as indeed it has none in any other affair of pure politics; but it has a decided preference for a suitable incumbent of the important office in question, and such a man it believes Dr. O'Brien to be. The objection has been raised in some quarters that Dr. O'Brien was a Republican "machine politician," but it is a sufficient answer to this charge to cite the expressions of opinion by a great number of the medical men of Buffalo, of all shades of political connection and representing both the medical colleges of Buffalo, which we find filling nearly two columns of the "Buffalo Evening News." All this shows—what we knew well enough before—that Dr. O'Brien is highly esteemed by his fellow-practitioners, those who know him best, and that his services in the great small-pox epidemic in Buffalo fifteen years ago, when he was the health physician of that city, are remembered and appreciated. It is our conviction that there ought to be no delay in his confirmation.

THE NEW YORK ACADEMY OF MEDICINE.

Certain propositions to amend the constitution and by-laws were to come up for action at the meeting of Thursday evening, the 19th inst., after the time of our going to press. Their purport was to extend the territory from which the Academy was to draw its membership, either to the whole State of New York or to a district including all localities within a hundred miles of the city; also to make officers of the Marine-Hospital Service and physicians residing in other States eligible as non-resident Fellows, as medical officers of the army and navy are now. It is evident, we think, that the Academy has reached a stage in which its field ought to be extended, but it is difficult to say whether the State at large or the district mentioned would be the more appropriate. We see no objection to taking in both, thus securing the whole State of New York and a goodly portion of New Jersey and Connecticut.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 17, 1888:

DISEASES.	Week ending Apr. 10.		Week ending Apr. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	2	0
Typhoid fever	9	2	6	4
Scarlet fever	136	24	167	38
Cerebro-spinal meningitis	7	7	6	6
Measles	41	2	58	7
Diphtheria	146	33	136	30
Small-pox	25	5	18	4

The Boston Medical Library.—A donation of $1,000 has been made toward the $10,000 necessary to purchase a site for a proposed new building at the corner of St. Botolph and Irvington Streets. When the land becomes the property of the library, a building costing about $60,000 will probably be erected.

A Chinese Medical School.—According to the "Union médicale," a medical school for Chinese students was opened in Hong-Kong on the 8th of October.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 1 to April 14, 1888:*

Baxter, Jedediah H., Colonel and Chief Medical Purveyor, and Greenleaf, Charles R., Major and Surgeon. Detailed as members of an Army Retiring Board appointed to meet at Washington, D. C., on Wednesday, April 4, 1888. S. O. 75, A. G. O., April 2, 1888.

Alden, Charles H., Major and Surgeon, will repair to Washington, D. C., on public business, and on the completion thereof will return to his station (West Point, N. Y.). S. O. 75, A. G. O., April 2, 1888.

Biart, Victor, Captain and Assistant Surgeon. Having been found incapacitated for active service by an Army Retiring Board, sick leave of absence is still further extended until further orders on account of disability. S. O. 77, A. G. O., April 4, 1888.

Gardner, Edwin F., Captain and Assistant Surgeon. Leave of absence extended fourteen days. S. O. 77, A. G. O., April 4, 1888.

By S. O. 79, A. G. O., April 6, 1888.

Bushnell, George E., Captain and Assistant Surgeon. Ordered from Fort Preble, Maine, to Camp Pilot Butte, Wyoming.

Stephenson, William, First Lieutenant and Assistant Surgeon. Ordered from Camp Pilot Butte, Wyoming, to Fort Verde, Arizona.

Mearns, E. A., First Lieutenant and Assistant Surgeon. Ordered from Fort Verde, Arizona, to Fort Snelling, Minnesota.

Kneedler, W. L., First Lieutenant and Assistant Surgeon. Ordered from Fort Snelling, Minnesota, to West Point, New York.

Borden, W. C., First Lieutenant and Assistant Surgeon. Ordered from Fort Douglas, Montana, to San Antonio, Texas.

Edie, G. L., First Lieutenant and Assistant Surgeon. Ordered from San Antonio, Texas, to Fort Douglas, Montana.

Society Meetings for the Coming Week:

Monday, *April 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement.

Tuesday, *April 24th:* Medical and Chirurgical Faculty of Maryland (Baltimore); Texas State Medical Association (Galveston); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society (private); Medical Society of the County of Putnam, N. Y. (quarterly); Hunterdon, N. J., Medical Society (Flemington); Litchfield, Conn., County Medical Society (semi-annual); Boston Society of Medical Sciences (private).

Wednesday, *April 25th:* Arkansas State Medical Society (first day—Fort Smith); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Philadelphia County Medical Society (conversational); Berkshire, Mass., District Medical Society (annual—Pittsfield); Middlesex, Mass., North District Medical Society (annual—Lowell); Gloucester, N. J., County Medical Society (quarterly).

Thursday, *April 26th:* Arkansas State Medical Society (second day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); Brooklyn Pathological Society; Pathological Society of Philadelphia (conversational); Roxbury, Mass., Society for Medical Improvement (annual—private); Cumberland, Me., County Medical Society (Portland); Hartford, Conn., County Medical Association (annual).

Friday, *April 27th:* Arkansas State Medical Society (third day); Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *April 28th:* New York Medical and Surgical Society (private); Worcester, Mass., North District Medical Society (annual—Fitchburg).

Obituaries.

Cornelius Rea Agnew, M. D., died on Wednesday, the 18th inst., in the fifty-eighth year of his age, after an illness of only a few days' duration—a peritonitis, understood to have originated as a typhlitis.

The deceased was a native of New York and a graduate of the College of Physicians and Surgeons, of the class of 1852. For a few years he was a general practitioner, but the greater part of his professional life was spent in the practice of ophthalmology and otology, in which department he was one of the first in New York to arrive at eminence. At various times he occupied numerous positions of distinction in hospitals and in medical societies, he was for many years the clinical professor of ophthalmology and otology in the College of Physicians and Surgeons, and he may almost be said to have created the Manhattan Eye and Ear Hospital. But, excellent as he was in all these capacities, it was not by his strictly professional work that he was known so much as by the devotion and intelligence with which he taught his fellows the duties of citizenship. Although the extent of his services in this direction was known to only a few, enough of them was known to secure his general recognition in New York as one of the most respected of her citizens. Perhaps the most far-reaching work of his life was what he accomplished as one of the organizers and working members of the United States Sanitary Commission. The commission was materially aided in its operations by his industrious labor, and guided by his wisdom. It is no more than the simple truth to say that every sick man and every wounded man in the Union army had his condition alleviated, so far as mitigation of the horrors of war was possible, by appliances that were largely due to Dr. Agnew's forethought and executive skill. In another sphere, as one of the trustees of Columbia College, his efforts to improve the institution were constant, and it is not to be doubted that they had much to do with bringing about the very decided advances made by the college during the last few years; and in a like capacity on the board of the College of Physicians and Surgeons he worked intelligently and zealously for the advancement of medical education in New York. In his devotion to the public interest he did not disdain to concern himself with political discussions and contests—never as a partisan or with any motive looking to his own advantage, but always as a source of light to those who were right at heart but perplexed in mind. In whatever sphere he acted, he always influenced men's minds powerfully, but, although he was a speaker delightful to listen to, he never resorted to oratorical devices, and seldom even to parliamentary tactics; it was rather his clear, cold logic, his evident fairness, and his unquestioned devotion to the general welfare that gave him his power in debate. Consequently, he never worked his hearers up to the point of voting under the influence of passion, and they never repented of having heeded his words. It long ago came to be understood in New York that Dr. Agnew's advocacy of any movement was *prima facie* evidence that the movement was a good one. To be sure, not every cause that he supported triumphed — occasionally intrigue, and on one memorable occasion medievalism, proved too much for him — but never did an opponent indulge in innuendo against Agnew without writing himself an ass. He was a man whose course it was never necessary to explain; he was *sans peur et sans reproche.*

Personally, Dr. Agnew was a man of wholesome and attractive appearance. His glance was clear and penetrating, but kindly. He played the Mentor to many a restless or misguided spirit, but his advice was given only when it was invited, and it always savored more of affection than of rebuke. With the community, with his professional brethren, with his patients, with his personal friends, and in his family, he was a remarkably exemplary man. His loss is that not only of the New York profession of medicine, but that of the entire people.

Letters to the Editor.

A CASE OF MANIACAL EPILEPSY.

63 West Ninety-seventh Street, New York, *April 9, 1888.*

To the Editor of the New York Medical Journal:

Sir: I forward you the report of a curious case of nervous disease which came under my observation about two years ago, which you may deem of sufficient interest to your readers to give a place in your journal.

On May 18, 1886, while the Pacific Mail steamship City of Sydney was lying in the port of Yokohama, Japan, the United States consul sent us a sailor destitute of means, to be taken back to his home in America, stating at the same time that the man was an epileptic and would require medical attendance. From the patient himself I gathered the following history: He was a native of California, twenty-two years of age, a sailor, and had been at sea seven years, most of that time attached to vessels plying between San Francisco and Europe. While on one of these voyages, during the year 1884, he fell from the fore-yard arm and sustained an injury of the head situated in the region of the parieto-occipital suture, from which he was laid up for a little more than two months. A year after this, while in Alaska, he was bitten in the calf of the leg by a dog "believed to be rabid." Two months later he was taken with a violent fit, which lasted for thirty hours, and from time to time since he had been attacked in a similar manner. During these convulsions he was very violent and dangerous to both himself and others. He stated, moreover, that he could tell half an hour before one of these attacks would come on by a feeling of determination of blood to the head and a sensation of compression starting from the occipital region in the neighborhood of the old wound, gradually extending forward over the parietal and on to the frontal region to the eyebrows. When the latter part was reached he would lose all knowledge of what was taking place.

I then made a careful examination of him. I found him to be a well-nourished and to all appearances a strong, healthy man, showing nothing peculiar excepting a cicatrix in the occipito-parietal region, about an inch in length, extending from above downward; also a cicatrix of a lacerated wound on the right calf. Besides this, he presented widely dilated pupils and a watery and injected eye, giving the face a fierce expression. He was able to talk rationally on all subjects, giving no evidence of impairment of his mental faculties.

From the history and symptoms I strongly suspected epilepsy. I at once put him on the use of large doses of the bromides, but was not altogether satisfied in my own mind that my conclusion was a correct one, and therefore kept a very strict watch on the patient. During the next four days I noticed nothing out of the usual run, but that he slept very little.

On May 22d, at 8 P. M., the patient sent for me, and informed me that one of his attacks was about to come on, and that I had better put him under restraint at once. Before I could get him thoroughly secured the convulsion had taken a very violent form, and it took the combined efforts of eight men to control him. His first symptom was violent trembling extending to the whole of the muscular system. His face was flushed and the veins stood out like cords; the pupils, from being dilated, were now but as pin-points, as in opium poisoning. Quickly following upon this condition was a fixation of the muscles of the larynx, the spasm extending to the thorax, inspiration becoming very labored and expiration producing a guttural growl. There was also a profuse secretion of ropy mucus from the mouth. His pulse was weak and so rapid that it was impossible to count it accurately. The temperature, taken in the anus, was 104·5° F. His mind was wandering and he muttered constantly. This condition of things lasted about forty minutes, when he returned to partial sensibility and demanded a glass of water, at the sight of which he was thrown at once into the most violent maniacal paroxysm, expectorating vast quantities of mucus and biting at everything within his reach. Tearing his shirt from his shoulders, he inflicted severe wounds on the upper part of his arms with his teeth. For the following two hours and a half he was the most violent maniac that I had ever seen, striving to do both himself and everybody about him injury, notwithstanding the hypodermic injections of half a grain of sulphate of morphine. At the end of that time he again asked for water, and once more on sight of it the same result took place. Long before this I had arrived at the diagnosis of a genuine case of hydrophobia, in which two other medical men, passengers on the ship, concurred. Much to my surprise, at about four o'clock in the morning he regained the complete use of his faculties, the only change being complete aphonia, which lasted twenty-four hours. The pupils were once more widely dilated and there was great exhaustion. During the day he both ate and drank without difficulty. While under my charge he had three more attacks of a similar nature, though not quite so prolonged. Previous to one of them he made a determined effort to commit suicide. These last convulsions took place on the nights of May 22d, 25th, and 31st.

I found nothing more worthy of note on arriving at San Francisco, except that the patient's friends stated that he was a confirmed opium-eater. I should also state that in the intervals between his attacks he was quite rational.

I committed him to the Stockton Insane Asylum as a person unfit to be at large, where he remained about three months and was then discharged, after which I lost all trace of him. My attention was called to this history by a somewhat similar one published in one of the daily papers, of a man having been found in the street suffering to a certain extent in the same manner as I have described, and having been taken to St. Vincent's Hospital.

Joseph N. Henry,
Late Surgeon, Pacific Mail Steamship Co.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of March 14, 1888.

The Vice-President, Dr. W. W. Keen, in the Chair.

(Concluded from page 417.)

Graduated Tenotomy in the Treatment of Insufficiencies of the Ocular Muscles (Stevens's Operation).—Dr. Charles Hermon Thomas read a paper on this subject. The study of disorders of the ocular muscles in relation to functional nervous diseases had, he said, received a strong forward impetus during the past year, chiefly due to the published results of the labors in this direction of Dr. George T. Stevens, of New York, whose work on "Functional Nervous Diseases," recently published,* had challenged special attention, even where it had not met with entire approval. The subject occupied a point on the line between the two important specialties of ophthalmology and neurology, taking somewhat from both, and had already, by force of circumstances, become in a certain sense a specialty by itself. The operation and its application had until recently remained to a remarkable degree personal in the hands of Dr. Stevens, notwithstanding that for many years he had reported it before medical societies and in the medical journals.† All this, however, had been changed by the publication, within the last year, of his work above referred to, which had brought the method into such prominent notice as to compel its recognition. Other operators had now entered the field, among whom was Dr. A. L. Ranney, of New York, who, as a neurological specialist, had reported ‡ a series of cases of the gravest neuroses successfully treated by the Stevens method. Beyond question a point had now been reached which showed the subject to be worthy of the most careful investigation.

What the author had to present in the paper was to a certain extent in the nature of a preliminary report, as his work was necessarily incomplete in some particulars, owing chiefly to the considerable length of time required for observation to arrive at a just estimate of the permanency of the results obtained, especially in the gravest and, therefore, most important cases. He would attempt to add little that was new to the presentation of the case as made by Dr. Stevens himself, and he could not hope, in the length of time allotted for its consideration, to make a statement commensurate with its importance, but he had thought it right to rehearse briefly its principal features and to give his own experience in connection therewith, together with a sketch of a few of his own cases.

It was now about ten years ago that the operation had first been brought to his notice by patients who had been under Dr. Stevens's care. It had seemed to him incredible that results such as they alleged had been produced in their cases could have been derived from the cause assigned. Again, he had questioned the practicability of performing the operation by the definitely graduated manner which was said to be practiced by Dr. Stevens. Under these circumstances, and in the absence of better information, his position had for a long time been one of earnest opposition to the practice. About three years ago, however, having under his care several cases of muscular asthenopia which he was unable to relieve, though he obtained the advice of several of the best known ophthalmologists, and being freshly reminded of the work of Dr. Stevens by a patient of unusual intelligence and reliability, who reported great relief obtained at his hands, he asked his assistance in the treatment of these cases. He kindly demonstrated to him, upon patients of his own, the practicability of the operation, and he became convinced of its great value. The results obtained were so satisfactory that since that time he had investigated the muscular as thoroughly as the refractive conditions in all cases coming under his care, and had as faithfully undertaken to correct them.

For the discovery of abnormity in any of the straight muscles, their physiological condition, both while at rest and while in action, and in all states of the accommodation of the eye, must be thoroughly understood. In order that binocular vision should result, the visual lines of both eyes must converge upon the same point, whatever might be the position and distance of the object. It was only under such circumstances that the rays of light were brought to a focus at corresponding points upon both retinæ. A slight deviation resulted in diplopia, constituting strabismus, a subject sufficiently well understood, and one to which Stevens's researches did not directly apply. But, while there might be perfect binocular vision, and not the slightest indication of strabismus, there might be, nevertheless, grave faults affecting the recti. It was these faults that Dr. Stevens had emphasized, and to these his observations had been chiefly confined.

In the normal condition of the ocular muscles the visual lines of both eyes naturally preserved an almost exactly parallel direction when looking at distant objects; and they maintained such a position of their own accord from muscular tonicity alone, without the necessity of any additional stimulus. This could be shown by prismatic tests. The artificial diplopia produced in making the test would be such that the two images would lie in that plane which was at right angles to the base of the prism.* If, for example, diplopia was induced by a prism placed before either eye with its base directed either outward or inward, the two images would lie in the same *horizontal* plane; and, in like manner, *vertical* prisms, with base up or down, would induce diplopia; but in this case the two images would be situated in the same *vertical* plane. The reason for this was that the normal visual lines of both eyes naturally lay in the same *horizontal* and *vertical* planes, even when the powerful stimulus which the need of binocular vision presented is abolished by the prism. Hence, if the eyes in the normal state were directed to a distant object, binocular vision would occur without the need of additional muscular action to bring the visual lines to properly bear upon the object. If, on the other hand, the visual lines of the two eyes did not naturally take the proper position, one of two things would result: either there would be no effort to bring them into correspondence, and strabismus with attending diplopia occurred, or, *more frequently*, by an extraordinary nervo-muscular effort, called into action by the demand for binocular vision, the proper position would be maintained; just as in facultative hypermetropia accommodation was necessary, even when parallel rays coming from a distant object were to be brought to a focus upon the retina. From this forced, though it might be involuntary or even unconscious, effort to maintain the proper direction of the visual lines the abnormal conditions under consideration resulted. There was abundant clinical evidence of the enormous expenditure of nerve force under these circumstances, and of the development of marked reflex disturbances, manifested in symptoms both of irritation and of exhaustion.

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* D. Appleton & Co., New York, 1887.

† See articles by Dr. George T. Stevens, on "Chorea," "Medical Record," 1876; on "Anomalies of the Ocular Muscles," "Archives of Ophthalmology," June, 1877.

‡ "The Treatment of Functional Nervous Diseases by the Relief of Eye Strain," "New York Medical Journal," January 7, 1888.

* Not that Dr. Stevens had by any means been the first to employ prisms for the discovery of muscular irregularities, but he appeared to have used them with greater precision and by more systematic methods than had before prevailed.

Dr. Stevens* had introduced a series of terms descriptive of the various abnormities to which the recti muscles were subject. The word *exophoria* designated simply an outward tendency of the visual lines, without implying anything as to which muscle or set of muscles was at fault. The opposite condition—namely, a tendency to convergence—was designated by the word *esophoria*, meaning an inward tending. If either visual line deviated above its fellow, the fact was expressed by the term *hyperphoria*, right or left, as the case might be, always remembering that the lower image represented the higher-tending visual line. It was to be remarked that the condition of hyperphoria was far more frequently productive of serious reflex disturbances than any other fault, and mainly for the reason that a small amount of deficiency in this direction might, and usually did, involve a considerable proportion of the total co-ordinating power of the vertical muscles; and this because the power of sursumduction was usually limited to about three degrees, while that of abduction was about eight degrees, and that of adduction might be fifty degrees and upward. The generic term to express any deviation whatever from *orthophoria*, the normal, was *heterophoria*. Finally, the amount of heterophoria found in any given case was equivalent to and expressed by the degree of the prism required to correct the fault.

In practice, the tests for insufficiency were made by placing prisms before the eyes with their bases in certain definite directions. Lateral diplopia was produced by a prism with base in, vertical diplopia by a prism either up or down. If, in lateral diplopia so induced, either image was above the plane of its fellow, the higher image belonged to the eye whose visual line was lowest, to be expressed as hyperphoria of the opposite eye. If, in induced vertical diplopia, either image deviated from the vertical, there was lateral fault—esophoria if the diplopia was homonymous, exophoria if crossed. In applying the prism test for the discovery of muscular anomalies it was not sufficient to be content with the results of a single or even several examinations, because the possibility of latency should always be borne in mind—as in latent hyperopia, the true fault might be concealed or masked. Indeed, as in latent hypermetropia there was sometimes apparent myopia from spasm of the muscle of accommodation, so in actual esophoria an apparent exophoria might be manifest, the result of spasm of the externi, and this was equally true of the other muscles. It was only by a careful consideration of all the circumstances, such as the degrees of abductive and adductive power, and, finally, by the use of temporary correcting prisms for whatever fault might be manifested, and following it up—but not leading it—as it developed by a new correcting prism until the fault became stationary, that we were justified in proceeding to operation. In one obstinate case of exophoria the author had several times obtained relaxation of spasm of the interni by a moderate dose of morphine administered hypodermically. But, though the after-results proved the observation under morphine to be expressive of the true condition in this case, there were obvious objections to the use of the drug as a matter of ordinary practice. The discovery of an efficient and safe agent for the relaxation of spasm of the recti muscles was greatly to be desired. It sometimes happened that muscular anomalies of considerable degree were discovered in connection with refractive faults. By correcting the refractive error first, not infrequently the muscular difficulty soon disappeared, showing the muscular to have been dependent upon the refractive state. The correction of refractive errors, especially those of hypermetropic character, should always be made before applying the prismatic tests.

Defects of refraction and accommodation were well known as the source of serious reflexes, especially headaches or severe migraine, nausea, and dizziness; but it was not so well known that defects of muscular adjustment from faults of the guiding muscles of the eye produced all these and many more serious results besides.

Dr. Stevens* had said:

"Respecting the importance to be attributed to ocular, refractive, and muscular anomalies, I fear that my views will for some time to come continue to be regarded as something more than radical; but I am ready to reaffirm the proposition made years ago, that, among the various elements constituting the neuropathic tendency, these anomalies must be regarded as occupying a pre-eminent position. Summing up the experience in this field of work, it is shown that, not in occasional and rare instances only, but in a large proportion of cases of the most redoubtable neuroses, unusual and most salutary results may be anticipated from attention directed to visual troubles."

Among the neuroses shown in many cases to be dependent upon such troubles were to be mentioned neuralgia, spinal irritation and neurasthenia, chorea, epilepsy, and mental disorders. Dr. Stevens had further said:

"Not only are those painful or irregular conditions usually described as neuroses in great proportion responsive to the relief from ocular tensions, but a great variety of conditions commonly regarded as local affections yield as readily, and prove that with some possible local complications they are, in fact, reflex phenomena. As an instance of this class of trouble, I may mention the fact that in more than a score of cases of extreme dysmenorrhœa—in each of which the periodical suffering has been of intense character, of regular occurrence, and of the full duration of the menstrual life of the patient—the dysmenorrhœa has failed to occur after relief to the tension of a superior or inferior rectus."

"So far as my experience goes, epilepsy very rarely results from simple conditions. The ocular anomalies in epilepsy are of the most complicated, and often of the most obscure, character. A simple insufficiency may induce headache or other minor manifestations, but the ocular causes of epilepsy are usually of a character most perplexing to the surgeon, and sometimes of a character which can not be completely remedied. Hence, great patience, and, in certain cases, much time and skill are required to accomplish that which can finally be done. If, in the mean time, the patient and his friends are constantly assured by both lay and professional advisers that his efforts must, of necessity, prove fruitless, he is apt to withdraw from treatment, even while defects which are of great importance are known to exist, and which, by continued efforts, might be removed."

Dr. Ranney was authority for the statement that in cases of epilepsy of long duration under treatment directed to ocular difficulties, the affection had been scarcely less tractable than diseases commonly regarded as easily curable. As furnishing a suggestion as to the possible method of production of epileptic attacks from eye-strain, it was interesting to note some experiments performed several years ago by Dr. Dercum, Dr. Parker, and others in the artificial induction of convulsive seizures. They had found that it was possible to produce spasms in many persons by the following method: †

"The subject being seated, the tips of the fingers of one or both hands were so placed upon the surface of a table as to give merely a delicate sense of contact—*i. e.*, the fingers were not allowed to rest upon the table, but were maintained, by a constant muscular effort, barely in contact with it. Any other position involving a like effort of constant muscular adjustment was found to be equally efficient. Any one object in the room was now selected, and the mind fixed upon it, or some subject of thought was taken up and unswervingly followed. After the lapse of a variable period of time, extending from a few minutes to an hour, and depending upon individual peculiarities to be noted, . . . the subject was frequently thrown violently to the ground in a general convulsion, preceded by tremors which rapidly became more violent. Seizures equaling in violence a general convulsion were by no means induced in all subjects, and were generally the result of experiments repeated many times during the same evening. In the experimentors the convulsions became so easily induced that it was thought advisable to desist for a long period."

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* "A System of Terms relating to the Conditions of the Ocular Muscles known as 'Insufficiencies,'" by George T. Stevens, M. D., Ph. D., "New York Medical Journal," December 4, 1886.

* See "N. Y. Medical Journal," April 16, 1887.

† See "Journal of Mental and Nervous Disease," October, 1884.

The *effort of constant muscular adjustment* here spoken of appeared not unlike the condition found in the eyes in cases of insufficiency of the ocular muscles; and it seemed not unreasonable to infer that, if such strain of the muscles of the forearm would produce results of the kind reported by the authors just named, the strain upon ill-balanced ocular muscles (which must be continuous during the whole of the time that the eyes were open) should be productive of even more serious and, indeed, permanent results.

In the great majority of these cases there was but one satisfactory method of treatment, and that was by graduated tenotomy. The operation consisted in making a small opening through the conjunctiva, exactly over the insertion of the tendon, when the tendon was seized with an extremely fine forceps and divided outwardly in each direction, preserving the extreme outer fibers, or, at least, the reflection of the capsule of Tenon, which served as an auxiliary attachment. Tenotomies for strabismus and so-called partial tenotomies had, of course, long been done, but there were radical differences between these and the operation here described. The fan-shaped expansion of the tendons of the recti at their points of insertion into the sclerotic was somewhat wider than was generally supposed, while the elasticity of their edges was an influential factor in determining a favorable result of the operation—in bringing about a relaxation which should be permanent by permitting the divided portion to retract and form a new attachment to the globe farther back.

The use of prisms as a means of treatment of marked heterophoria was not to be relied on, as in many cases they were found to be insufficient and disappointing. They, however, had a certain value as means of systematic exercise of the ocular muscles, particularly in the milder cases. When the correction was made by tenotomy, all that was necessary to be done in a given case should be regarded, in a sense, as one operation, though it might be in several stages and at different periods—as a watchmaker counted the regulating of a watch one operation, though he might be obliged to move the regulator a number of times; or as the correction of an astigmatism was one operation, though it might involve a number of sittings. In one complicated case the author had operated as many as seven times—the first operation nearly two years, and the last a week ago—the net result being an unquestionable gain both in head symptoms, which had at one time been alarming, and in the severe asthenopia to which the patient had long been subject. Previous to the operation she had suffered from severe pain in the region of the eyes and in the back of the head, accompanied by general nervous distress of an entirely disabling character. An eminent ophthalmologist had declared her to have organic disease at the base of the brain from the appearance of the fundus. This was about three years ago. To-day this lady had assured him that she felt "wonderfully better," and had expressed her entire satisfaction with the treatment she had received.

It was to be re emphasized in this connection, as an additional caution, that no operation was ever to be undertaken unless the indications for it were positively made out. From a perfectly plain case, evident to the merest tyro, to one demanding the greatest skill and patience of the most experienced there was every gradation. Nothing would tend more to bring discredit upon the procedure than premature operations, which might result in such disturbance of the ocular muscles as seriously to cripple binocular vision without in the least alleviating the reflex condition for which the operation was undertaken.

After giving the histories of some of his cases, showing a patient, and exhibiting photogravure proofs belonging to Dr. Stevens, the author concluded by saying that whether the allegation that the neuropathic predisposition was more frequently due to eye-strain than to other conditions was fully justified by the facts or not, it was unnecessary at present to determine; seeing that enough was known to make it certain that eye-strain from muscular fault was the cause of grave and varied reflex neuroses; and that in these cases carefully graduated tenotomy promised relief. Besides, there was in such cases always sufficient justification for the correction of the fault for the sake of the eyes and sight, apart from the nervous condition. His own experience covered many of these operations, performed for the relief of a variety of conditions, and, notwithstanding serious difficulties at times encountered, he had a steadily increasing confidence in the legitimacy and value of the method.

Dr. H. F. **Hansell** would like to ask Dr. Thomas for a more definite statement as to the means of diagnosis. To his mind these are not at all satisfactory. The recognition and the exact determination of superior and inferior insufficiencies were very difficult, much more so than of lateral defects.

Dr. B. A. **Randall** said that, as to diagnosis, much had been written, sometimes pretty wide of the mark; and he could not see that Dr. Stevens had improved our methods. He had brought forward a very nice set of terms for what had long been known, and he had expressed clear-cut opinions which read well. In the same way, Landolt made out very pretty graphic charts of cases, and marked out well-defined groups, which were to be treated according to certain rules. But the cases which the speaker met with in practice refused very often to be included in such categories, and very dissimilar cases afforded discouragingly similar charts. He had understood from Dr. Thomas's paper that the estimation of defects was largely made with a distant object, presumably a light at twenty feet. To do this we must know the refraction and the accommodation, and he supposed that these were investigated as a matter of course. But it was not safe to take the accommodation for granted. He could himself change his exophoria to apparent esophoria by the accommodative effort, so called; and every patient could as readily do the same. As to correction by operation, he could not speak, like Dr. Thomas, from personal experience. We all knew that when a certain degree of error was reached it was necessary to operate, and Dr. Stevens placed that point very low. His method of operating was highly praised as a delicate one, but the necessity of dividing the operation into many steps was rather unfortunate. However, if he could thus relieve epilepsy, that minor disadvantage could be overlooked. It might be said in conclusion that, except in pointing out that *hyperphoria* was a frequent cause of perplexing and irregular insufficiencies of the lateral muscles (?), Dr.

Stevens had added little to our knowledge of the nature of these affections; that in his statements as to their importance he had gone much further than the experience of equally competent and diligent investigators had enabled them to confirm him in; and that in his operative treatment he had merely developed a refinement of the partial tenotomy long in use, as the only means of correcting, without overdoing it, the minute deviations from the perfect balance which he deemed worthy of operative interference.

Dr. Thomas replied that lack of time had prevented him from treating at length in the paper of the points as to diagnosis which had been made the subject of questions. There was a variability, and yet, after all, a certainty, in these tests which came as the result of practice and observation. There was an irregularity in the results of the tests from day to day, but, after getting the extreme limits of the swing and studying all the circumstances of the case, one was able to strike an average which very fairly represented the error to be corrected. Then a prism was temporarily adjusted to compensate for this error; and thus we made a crucial experiment and were further guided by the effects obtained. A lighted candle at twenty feet, and the dot and line of von Graefe at reading distance, were *both* to be employed as test objects, and a comparative study should be made of the results obtained—both in the absence and in the presence of accommodation. In this way we frequently got important clews. Sometimes anomalies appeared in the action of the lateral muscles on comparing the tests at reading distance with those at twenty feet; and when great erraticism of this sort was shown, we might be pretty sure in the majority of cases that we should in the end find a manifest hyperphoria. Unfortunately, there was no known analogue of the mydriatics which we could well use in these cases, and yet with great patience and watchfulness we should usually succeed. His results had been hopeful in epilepsy, but his operations were too recent to speak positively of cure. In reply to a question by Dr. Osler, Dr. Thomas said that he had not as yet met with any case of chorea suitable for the operation.

Book Notices.

Transactions of the American Gynæcological Society. Vol. xii. For the Year 1887. New York: D. Appleton & Company, 1888. Pp. 512. [Price, $5.]

Many circumstances conspired to make the last meeting of this society noteworthy and memorable. It was held in New York, it was honored by the presence of a distinguished body of guests from various parts of the world, and the papers and discussions, while they inaugurated no new epoch in gynæcology, were unusually animated and interesting. From the "Address of Welcome" to the end of the volume there is much profitable reading. It is to be regretted that Apostoli's paper and the discussion on it were not incorporated in the volume. Scarcely any subject in gynæcology is receiving more attention at the present time than the therapeutic value of electricity, and Apostoli has played so important a part in the development of this subject that it would seem to have been especially fitting that his words to the American Gynæcological Society should be preserved in its records. The paper by Doléris, setting forth the indications for Alexander's operation, the method of performing it, and the results, will be found as clear and satisfactory a demonstration of the subject as has ever been made.

Bantock's paper on the treatment of the pedicle in supravaginal hysterectomy was important, not only as an expression of the matured views of one who has had large experience in the extraperitoneal treatment of the pedicle, but also because it called out the views of Martin, who, since Schroeder's death, may be considered the chief advocate of the intraperitoneal method.

Johnstone's paper on the infantile uterus suggests a number of questions which involve most important considerations. His assertion that the uterus is independent, at least as to its nerve supply, of the adjacent organs, which have hitherto been supposed to have intimate reciprocal relations with it, while it increases our knowledge of an obscure subject—if it is confirmed—also opens up new difficulties to the gynæcologist. It may signify the discovery of an increasing number of useless uteri, and, if useless, it is but a step to consider them injurious—*facilis descensus Averni*—so that there is a possibility that the near future may see the question of the extirpation of the uterus (malignant disease being now excluded) approached with the same want of careful deliberation which is now frequently exhibited concerning radical operations upon ovaries and Fallopian tubes. This suggestion is made in no flippant mood, for no careful observer can have failed to notice during the past generation the ease with which current notions and theories in gynæcology have been adopted and extended. Notwithstanding the possible dangers which may inhere in Dr. Johnstone's paper, it is unsurpassed by any in the volume for originality of research and independence of conclusions.

Reports on the Progress of Medicine.

CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

The Treatment of Eczema and Psoriasis.—Dr. Myrtle, of Harrogate, in England, reports ("Lancet," Dec. 3, 1887, p. 1105) favorable results from the use of the Harrogate sulphur waters in some very bad cases of eczema and psoriasis. He has found that the best manner of using the water is at a low temperature, the patient remaining in the bath as long as he feels comfortable. In eczema, internal treatment for obvious derangement of the system is resorted to according to the nature of the case, and the diet is regulated. In psoriasis internal treatment and diet are considered useless. In order to derive benefit from the baths the patient must be free from disease of the heart, liver, or kidneys, as well as from gout and rheumatism.

Chronic Eczema of the Nostrils is the theme treated of by Herzog in the "Archiv f. Kinderheilkunde," 1887, Hft. iii, p. 211. He regards this trouble as one expression of the scrofulous diathesis in children in the majority of cases. In all the cases there exists a chronic rhinitis. It most often affects the junction of the skin and mucous membrane, and is hardest to cure when it locates itself on the inner side of the point of the nose. It frequently is accompanied by furuncles, and acts as a point of departure for recurrent attacks of erysipelas. The treatment consists in softening and removing the crusts and in the application of yellow-oxide-of-mercury ointment, or equal parts of unguentum plumbi and pure vaseline spread on lint and placed in the nostril so as to be accurately applied to the diseased part. Together with this treatment due attention must be bestowed upon the chronic rhinitis.

Furuncles following Eczema.—Unna draws attention to the frequent occurrence of furuncles after an attack of eczema ("Monatshft. f. p. Dermat.," 1888, No. 3), and regards their occurrence as a sign that the eczematous process is at an end. He confesses, however, that this knowledge on the part of the physician is of little comfort to the patient. Why furuncles should occur as a sequence to eczema is uncertain. It is possible that the fungus of eczema [Unna believes in the parasitic origin of many cases of eczema] may prevent by its presence the growth of the fungus of the furuncle; or that the eczema leaves the tissues in a proper condition for the growth of the *Staphylococcus aureus et albus*. It is the duty of the physician to prevent this sequence of diseases by treating the eczema during its final stages by means of some active antiparasitic, and the surest of all is the addition of one to two per cent. of corrosive sublimate to zinc ointment, combined with the internal use of one sixth of a grain of sulphide of calcium three times a day. Carbolic acid, thymol, resorcin, and sulphur may also be used as additions to zinc or lead ointments or pastes. Tar and salicylic acid are not so efficacious.

The Treatment of Acne.—When Unna takes up even an old theme we expect him to treat it in a new way, nor are we disappointed in the paper now before us ("Monatshft. f. p. Dermat.," 1888, No. 1). He divides acne into two clinical divisions: 1. The process of closing of the follicle and formation of the comedo. 2. The process of suppuration of the follicle. Comedones are to him only the evidence of the abnormally close coherence of the corneous layer of the skin in the parts supplied with lanugo hairs. The corneous layer becomes thickened and closes the mouth of the follicle. The comedo forms on account of the continuance of the parakeratosis on the inside of the follicle. Suppuration only succeeds to the comedo formation in those follicles which contained *Staphylococcus aureus et albus* before they became closed, or into which they have entered on account of some subsequent irritation, as from tar, chrysarobin, or the like, permitting their breaking through the walls of the glands. The indications to be met in the treatment of acne are two: 1. The loosening of the corneous layer of the skin. 2. The killing of the staphylococcus. We can fulfill the first indication in public practice by the use of green soap, acetic acid, a five-per-cent. caustic potash solution, and salicylic-acid plaster. In private practice these are too rough procedures, and it is better to use sulphur with carbolic acid, or resorcin with corrosive sublimate. Two or three times a week it is well to scrape off the whole diseased parts with the curette, open all pustules, and squeeze out all comedones. The patients should wash with warm water and soap, and follow this, if their skins are tender, with a powder of oxide of zinc and flour. During the night the medicament is best applied in a paste; during the day in a watery or spirituous solution, two or three times daily after washing. Thus, at night we might prescribe:

℞	Benzoinated zinc ointment.............	86 parts;
	Precipitated sulphur..................	10 "
	Siliceous earth.......................	4 "

And by day:

℞	Resorcin..........................	2 to 5 parts;
	Glycerin..........................	1 part;
	Orange-flower water...............	20 parts;
	Alcohol...........................	80 "

Or by night:

℞	Benzoinated zinc ointment.............	80 parts;
	Resorcin..............................	10 "
	Siliceous earth.......................	10 "

And by day:

℞	Corrosive sublimate...................	0·05 to 0·2 part;
	Glycerin..............................	1 "
	Orange-flower water...................	20 parts;
	Alcohol...............................	80 "

After the acne is pretty well overcome by these means, it is well for some time to use a resorcin paste, or a resorcin-sublimate-spirituous solution, or simply the use of sublimate soap.

A Paste for Pemphigus, made of equal parts of linseed-oil, lime-water, oxide of zinc, and chalk, is recommended by Unna ("Monatshft. f. p. Dermat.," 1888, No. 2). This is said to work admirably in drying up the new blebs and preventing their return.

The Anatomico-Pathological Alterations in Alopecia Areata and Alopecia Syphilitica.—Giovanni, who has already bestowed much careful labor upon the study of the hair in health and disease, read a paper upon this subject at the last congress of Italian physicians ("Monatshft. f. p. Dermat.," 1888, No. 1). He has failed to find any microorganisms in alopecia areata, and believes that the disease is due to a disturbance of the nutrition of the follicles. He has found a heaping up of leucocytes about the blood-vessels in the immediate neighborhood of the follicles, and a thickening of the connective-tissue fibers of the walls of the follicles. On this condition one of atrophy follows. The fall of the hair he regards as a process analogous to the scaling off of the epidermis which follows upon slight disturbances in the nutrition of the corium. In syphilitic alopecia a widening of the blood-vessels in the immediate neighborhood of the hair root-sheaths was found, accompanied by an infiltration with lymphoid cells. Mibelli at the same meeting reported that he had repeated the experiments of Joseph, and had produced bald patches strongly resembling those of alopecia areata. These had appeared in from fifteen to thirty-two days after the operation. Within three months after the hair had fallen it grew in again.

Trichorrhexis Nodosa and Sycosis.—Giovanni, of Bologna, has been continuing his study of the hair in health and disease, and contributes a long and interesting paper upon the subject to the last number of the "Vierteljahresschrift f. Dermatologie und Syphilis" for 1887. In trichorrhexis nodosa he has found that most of the diseased hairs have a triangular contour on cross-section, and only very few of them approach the normal oval shape. In those with triangular contour a more or less well-marked depression showed itself upon one, two, or three sides, which caused the angles to stand out prominently. Even those hairs which approached an oval shape were marked with slight depressions that made the contour irregular. Among the normal hairs were found triangular ones, but not so frequently as in the parts affected with the disease in question. When the hairs split the division is always into two or three large fibers before the hair becomes fringed out. The splitting of the ends of the hair is a process identical with the splitting in trichorrhexis nodosa, only that the process is limited to the ends of the hair. The medulla is affected in trichorrhexis nodosa only secondarily, as is proved by the fact that it shows no alteration till the cortex is split.

In sycosis the affected hairs are always thicker than normal, and their contour is more or less notched, so that the hair presents irregular projections, which may number anywhere from two to six. In the middle of the hairs are various broad and irregular cavities filled with pigment, fat, and detritus. These are sometimes so numerous as to occupy nearly all the substance of the hair. It is possible that these thick hairs may be produced by the growing together of several hairs from the same follicle. These large hairs act as irritants.

The Bacilli of Anæsthetic Leprosy.—After a careful study of a case of anæsthetic leprosy which proved fatal, Chassiotis concludes ("Monatshft. f. prakt. Dermat.," No. 23, 1887) that leprosy is not only a disease of the peripheral nerves, but also of the spinal cord; that the so-called lepra cells are in reality colonies of bacilli located in the lymph-channels and surrounded by a mucous envelope, and that when the spinal cord is affected there is found an inflammation, beginning about the venæ centrales.

The Parasites of Favus and Ringworm.—Some time ago, in 1886, Quincke, of Kiel, declared his belief that there were at least three different forms of fungus in favus, and these he named α, β, and γ fungi. Now, again ("Monatshft. f. prakt. Derm.," Nov. 15, 1887), he brings forth facts in support of his position, and propounds the thesis that the α fungus occurs almost exclusively in favus of the non-hairy portions of the body, and is its cause, while the β and γ fungi, especially the latter, have the hairy portions, particularly the scalp, as their sphere of action. He proceeds so far, indeed, as to add a name to our already burdened nomenclature—that is, *Favus herpeticus*—by which he would designate favus of the body due to his α fungus. A table of diagnosis between this form and favus of the scalp—favus vulgaris, as he calls it—is given.

In the same periodical Quincke gives the appearances presented by cultivations of *Trichophyton tonsurans* in comparison with those of *Achorion Schoenleinii*. In many points the trichophyton resembles the α-favus fungus, and in many other respects differs from it. On gelatin at ordinary temperatures the herpes fungus grew slower than the α fungus; it appeared fluffy white on the surface like the α fungus, but soon became moister, and showed more tendency to grow downward. On agar-agar in a warm temperature the herpes fungus grew more rapidly, and macroscopically resembled very closely the γ fungus of favus. The herpes fungus under the microscope differed from the α-favus fungus in having the ends of its mycelia simply rounded off and not tapering, and the mycelia themselves were straighter. The herpes fungus differed further from the *a*-favus fungus in not growing on potato.

Treatment of Ringworm.—It affords us pleasure to note that two of our French *confrères* commend in the treatment of this affection the method proposed by our countryman, Dr. Reynolds, of Chicago. Dr. Charon and Dr. Gevaert report ("Jour. de méd." de Brux., Nov. 20, 1887, p. 673) excellent results in the treatment of ringworm by the use of galvanism, the positive pole with its electrode, saturated with a three- to five-per-cent. solution of bichloride of mercury, being applied to the diseased spot for ten or fifteen minutes. They found that even with a three-per-cent. solution considerable burning was caused, although but a moderate current was employed. This they take for evidence that the mercury penetrated the tissues, as the same current without the mercury produced no discomfort. The average duration of treatment was about four weeks.

Treatment of Syphilis by Calomel Injections.—Welander, of Stockholm, after treating forty-two cases of syphilis with hypodermic injections of calomel, draws the following conclusions ("Vierteljhrschrft. f. Derm. u. Syph.," 1887, xiv, 4): In nearly all his cases he obtained as good results by this method as he could expect, but it alone could not be depended upon for a cure; other methods of treatment must be used with it, such as local treatment, and the internal use of iodide of potassium. It did not seem to have any more effect in preventing relapses than any other method. The injections often caused painful infiltrations and sometimes abscesses. Stomatitis of greater or less severity occurred in thirteen of the cases. The quantity of mercury which the organism takes up can not be exactly determined by this method, though it can be more nearly approximated to by it than by the use of the drug by the mouth or by inunctions. Still, he believes that the method is worthy of further trial, as it is a simple and powerful one.

Miscellany.

The Seventh Meeting of the International Ophthalmological Congress will be held in Heidelberg, on the 9th, 10th, 11th, and 12th of August of this year. In January the provisional committee, consisting of Dr. Otto Becker, of Heidelberg, Dr. Wilhelm Hess, of Mayence, and Dr. J. Stilling, of Strassburg, issued the following circular:

"At the meeting of the Heidelberg Ophthalmological Society held last year it was decided to celebrate the twenty-fifth anniversary of the society by inviting the ophthalmologists of all countries to attend its meeting to begin August 9, 1888, and by their presence to expand the meeting of the local ophthalmological society into an International Congress. The undersigned committee was intrusted with the preparations necessary for the carrying out of this plan.

"The committee felt able to undertake this honorable though difficult task, since the Ministry of the Grand Duchy of Baden, as well as the municipal authorities of Heidelberg, had volunteered their most willing assistance in the undertaking. There is therefore some prospect, notwithstanding the more limited circumstances under which the congress will meet in Heidelberg, that, besides the scientific stimulus which the meeting of so many distinguished ophthalmologists will naturally afford, our visitors will carry away with them impressions of town and country which, we hope, will not fall far short of the pleasant recollections of such cities as Brussels, Paris, London, New York, and Milan.

"In informing the representatives of ophthalmology of the determination of our society, we feel compelled, before publishing an exact programme of the congress, to discuss the following point with some fullness: Is the Ophthalmological Society of Heidelberg justified in designating this international meeting which it convokes the seventh session of the International Ophthalmological Congress? An answer to this question can be given only after a review of the history of the *Congrès international périodique d'ophthalmologie.* But first, for the sake of chronological order, we must mention what was without question the First International Ophthalmological Congress, that held at Brussels between the 13th and 16th of September, 1857. The initiative in convoking it was taken by Dr. Warlomont, editor of the 'Annales d'oculistique,' which has appeared in Brussels since 1836. In his opening address President Fallot attributes the merit of the organization of the congress to him and to the kindly assistance of the Minister of the Interior. The international character of the meeting is shown by the vice-presidents, appointed from the countries represented. They were James Dixon, Arlt, Melchior (Denmark), Sichel, Stromeyer, Sperino, Donders, Marques (Spain), v. Graefe, v. Kabath (Russia), and Ammon. There were 160 members present; Warlomont was secretary.

"The *Société universelle d'ophthalmologie*, sanctioned by the French Government in March, 1861, held its first meeting in October of the same year This meeting, however, from a scientific point of view, hardly deserves to be called an international congress. In the report of the second meeting of the *Société universelle* (30th Sept.–3d Oct., 1862) Warlomont writes that the first meeting was indeed attended by a few distinguished foreign ophthalmologists (*un certain nombre d'ophthalmologistes étrangers de distinction*), some of whom came as representatives of their governments. There were in all but 15 present. But these distinguished visitors, Warlomont continues, were not a little surprised on their arrival in Paris to be left entirely to their own resources and to find only a few French colleagues at the meeting. After a few days of scientific discussion, it was recognized by the members that their first and most important duty was the reorganization of the society. This was done at the session on the 13th of October, 1861, in which the Paris specialists also participated. It was decided that the meetings should not be held exclusively at Paris, but that each year the society should convene in another town, excepting the following year (1862), when it should meet once more at Paris. At first ten other towns in different countries were designated as places of meeting. Subsequently the permanent committee in Paris added twenty-one others to the list.

"The constitution presented by the permanent committee at the second meeting of the *Société universelle* (1862) was discussed in its first session and was adopted with a few modifications. The most important of these was that the meetings should be held every fourth year instead of annually. The number of members present at this meeting was 113. Thereupon Warlomont drew attention to the fact that the society, in the adoption of so long an interval between its meetings, had changed its character and had become in reality a periodical congress instead of a permanent society, and he proposed that it should accordingly take the name *Congrès international périodique d'ophthalmologie.* He very justly added that on this account the meeting of 1862 might very properly be considered the Second Congress, or a repetition of that held at Brussels in 1857. 'Too many links connect it with the congress which met in Brussels in 1857 for it not properly to be considered as a continuation of the work to which so many distinguished members of this assembly so eminently contributed.'

"In this way the Periodical International Ophthalmological Congress was definitely organized. Let us follow its history. Vienna was selected for the place of meeting of the third session, in 1866. But, although many preparations had been made by the committee, the meeting was rendered impossible by the Austro-Prussian war, and insurmountable obstacles prevented a meeting in Vienna also in 1867. Thereupon Friedrich Jaeger and Arlt very properly proposed to the permanent committee of the *Société universelle d'ophthalmologie*, still existing in name, that an invitation to Paris for the third session in 1867 would be acceptable. The International Exposition had already attracted the attention of the entire scientific world to Paris. The Third Session, called the Second Paris Congress, was accordingly opened in the *Salle du Grand Orient de France* at Paris on the 12th of August, with an attendance of 114 members. This brilliant meeting, distinguished by the presence of Helmholtz, is well remembered. At the morning session of the 14th of August, Berlin was chosen for the fourth congress, in 1871, Arlt having formally declined for Vienna. But again the Fates prevented. The death of v. Graefe in 1870 would have made the success of a meeting in Berlin doubtful had not the political situation rendered it quite impossible. By the motion of Critchett at the meeting of the Heidelberg Ophthalmological Society (September 5, 1871) the International Congress was revived. Without special com mission, he assumed the responsibility, in his own name and in behalf of his English colleagues, of inviting the oculists present to hold a meeting of the International Congress in London in the following year, and advising that this meeting be not appointed for later than the middle of August, as September in London is very unpleasant.

"The Fourth Congress accordingly met in London, beginning August 1, 1872. In the opening address Critchett referred to the fact that the meeting had been proposed in Heidelberg. There were 104 members in attendance. The celebrated English ophthalmologists, more particularly Bowman and Critchett, the universally renowned Moorfields Hospital, English hospitality, and the interest offered by the metropolis, made this congress most memorable. It also had the advantage that the next meeting (the fifth session) was actually held at the time and place designated at its closing session on the 3d of August.

"Preparations were made by Agnew, Noyes, and Roosa, and the congress met at New York between the 12th and 14th of September, 1876. Among the considerable number of members, Europe had naturally but a small representation because of the great distance. The perpetuation of the congress was thought to be sufficiently assured when, on a motion of Noyes, a committee was appointed consisting of Hansen, of Copenhagen, Becker, of Heidelberg, and Arlt, with full power to appoint the time and place of the next meeting and to empower a committee at the chosen place to make all necessary preparations. The committee found it quite impossible to arrange a meeting. Neither in Copenhagen nor in any of the Swiss towns could the co-operation of those most concerned be obtained. The Ophthalmological Section of the International Medical Congress, in Geneva, in 1877, proposed that the International Ophthalmological Congress be convoked to Vienna in 1880. Although Arlt had assurance of the aid of the Austrian Government, the congress died from lack of interest on the part of the other eminent oculists of Vienna, whose co-operation had vainly been sought for by the committee. It was thought impracticable at that time to meet in one of the towns of the new German Empire. Nothing remained for the committee but to return its commission to the Ophthalmological Section of the International Medical Congress at Amsterdam. It was thereupon decided at the meeting of the 13th of September, 1879, that the sixth session of the International Ophthalmological Congress should meet in one of the towns of Italy, to be chosen by the Italian Ophthalmological Society. Thanks to the energy of Donders, who presided in Amsterdam, Italy undertook the responsibility of the meeting.

"Quaglino, chairman of the committee, opened this sixth session of the congress at Milan on the 1st of September, 1880. The number in attendance was 118. Before the close of the session Cervera (Madrid) gave an invitation to meet at Madrid in 1884, which was accepted with applause. A motion of Landolt, to the effect that it would be well to merge the International Ophthalmological Congress into the Ophthalmological Section of the International Medical Congress, was laid over for decision at the next meeting of the International Ophthalmological Congress. The proposed meeting at Madrid did not take place. The International Medical Congress, which was to have met in Copenhagen in 1883, had to be postponed till the next year. The Spanish committee, thinking it best not to call a meeting to Madrid the same year, left the arrangement of the next meeting to the Ophthalmological Section of the International Medical Congress. It is not shown by the official report of the Copenhagen congress whether there was any consideration of the subject by the Ophthalmological Section.

"Since then no mention has been made of the International Ophthalmological Congress. Shall it be allowed to drop silently from the list of scientific congresses? The Ophthalmological Society of Heidelberg hopes not. In giving expression through us, its committee, to the hope that it may entertain many foreign colleagues at the celebration of the twenty-fifth anniversary of its foundation, to take place in the second week of August of this year, in Heidelberg, the society desires to recall the fact that on a former occasion the International Ophthalmological Congress was resuscitated in Heidelberg, and to point out that the motion made by Landolt at the close of the Milan congress remains to be considered. Should this motion meet with approval, the International Ophthalmological Congress, though losing its independent existence, will continue to live honorably and with renewed vigor under another form. The Ophthalmological Society ventures to express the hope that invitation may find general acceptance, more particularly as the International Ophthalmological Congress has not heretofore met in a German town."

Subsequently, in March, the committee issued a provisional programme, including reports on "Glaucoma," by Priestley Smith, of Birmingham, and Snellen, of Utrecht; on "Cataract," by Gayet, of Lyons, and Schweigger, of Berlin; and on "Bacteriology," by Leber, of Göttingen, and Sattler, of Prague. The general meetings are expected to be held in the aula of the University. During the afternoon of the last day, Sunday, August 12th, there will be a *fête champêtre* at Ziegelhausen, in the valley of the Neckar; and after sunset the old castle will be illuminated.

The Doctor in Fiction.—A recent issue of the "Lancet" contains the following as a leading article:

"A bitter attack recently made upon the profession in the pages of a novel reminds us that at the present day all classes and professions are to a certain extent at the mercy of the writer of fiction. Novels now enjoy a portentous popularity, unparalleled, and indeed unapproached, at any other epoch of the world's history, and form the sole intellectual pabulum of thousands. We are not concerned at present to inquire how far this preponderance of one species—and that certainly not the highest—of literature is a thing to be deplored or to be cheerfully acquiesced in; but there can be no doubt that the novelist is, whether by accident or deliberate intent, one of the potent forces of the age. No doubt he does not usually pose as a teacher or moralist, didactic novels being commonly regarded both as artistically defective and as destined to a precarious popularity, and few readers of fiction deliberately base either opinion or conduct upon the dictum of a novelist. Not the less, however, is it most true that the books we read influence our mental and moral nature as powerfully, though as insensibly, as the air we breathe affects our bodies; and hence the fiction of the day not only reflects, but to no inconsiderable extent molds, current thought and opinion. It is not, then, a matter of indifference to us that our professional methods, aims, and work should be honestly depicted, and not maliciously caricatured, in the pages of the modern novel.

"Taking a broad view of the subject, we do not think that any complaint can justly be made regarding the portraiture of medical science and its professors which is to be found in the fiction of this century. No doubt the picture is often palpably defective in some of its details, and the lack of practical knowledge is on many occasions abundantly manifest, but there is seldom any designed ill-will or palpable untruth. Medical practice is commonly depicted as an admirable field for the exercise of all the nobler qualities—courage, endurance, self-reliance, foresight, patience, sympathy; and the skill, wisdom, and matured experience which distinguish the leaders of our profession receive ample and ungrudging recognition. We can hardly complain that the reverse of this picture is also painted with no hesitating hand, and that ignorance, quackery, and cupidity are held up to merited ridicule and reprobation. We must remember that the aim of the novelist is primarily to amuse, and that satire is often a readier means to this end than serious delineation. It is not surprising, then, that a writer like Dickens, who delighted to paint, not average humanity, but oddities, whether amiable or ridiculous, should seize the ludicrous side of medical life, and find a congenial subject in the freaks of the medical student of the day. A higher moral teacher has given us in the hero of 'Middlemarch' a professional portrait of which we may be justly proud. The young and high-spirited surgeon, full of generous aims and noble ambition, who struggles through the difficulties presented by the narrow sympathies and petty jealousies of a small country town, is a powerful study which can hardly leave the most careless reader unimpressed. A favorite novelist of to-day, Mr. R. L. Stevenson, has gone perhaps further than any other writer in praise of our profession, when he pronounces the physician as 'the flower of modern civilization,' and does not hesitate to place him as first in the rank of those who struggle for the elevation of humanity.

"As no habit is more wholesome than that of looking at ourselves from the point of view of others, we may with advantage consider those characteristics of our profession which apparently unfavorably impress observers so shrewd as are many of our novelists. First among these we must place professional jealousy and professional differences of opinion. The former is no doubt a great evil. An enlarging knowledge of the world teaches us that a scrupulous regard for the rights of our professional competitors and an honorable solicitude for their professional reputation are not only right, but eminently wise and politic. The whole profession is wounded by a slander upon any member of it, and, while there must always be great contrasts in point of natural talent and acquired experience, it is our duty not rashly or lightly to utter any word which may be even perverted to imply that a professional brother is incapable of discharging with credit the work which daily devolves upon him. As regards professional differences of opinion, we think a little more candor would often be advantageous. When we find a bench of judges perhaps evenly divided upon the meaning of a statute laboriously constructed so as to insure perfect precision and lucidity of meaning, we can not see that there need be any hesitation in confessing that serious difference of opinion, even among the ablest and wisest of our profession, is often inevitable in dealing with the difficult and sometimes inscrutable processes of disease. Medicine is not, perhaps never will be, an exact science, and mathematical certainty of diagnosis or prognosis is often simply impossible. Sensible men will speedily recognize this fact and appreciate our candor if we are careful to abstain from the assumption of knowledge which we do not possess.

"A more serious charge has lately been urged with some persistence, viz., that medical men unduly trifle with their patients for the purpose of advancing science, and that our hospitals especially are the scene of dangerous experiments, in which the interests of the suffering are subordinated to the acquisition of knowledge. Now, if it be once thoroughly realized that medical science is still largely empirical, and that new remedies and new methods of treatment are constantly being suggested for the improvement of our art, it is obvious that in a certain sense experiment is not only justifiable, but absolutely incumbent upon us. If every trial of a novelty in practice were ruled out of court as inadmissible because involving something in the nature of an experiment, we should never have advanced beyond the wild theories and crude practice of Hippocrates and Galen. We should still be holding fast to long-exploded errors and practicing antiquated methods of treatment to the infinite loss and detriment of humanity. We must seek truth in spite of detraction and misrepresentation, and a cautious trial of any remedy or any therapeutic method which offers fair hope of saving one additional life or allaying one human pang must be courageously and perseveringly essayed.

"The days are gone when medical art could cover itself with that cloak of mystery so dear to many. The 'fierce light' of modern criticism beats upon us, as upon all. We do not complain of that; we welcome it rather, provided always that the criticism is founded on real knowledge, advanced in the spirit of charity, and that due care be exercised that truth is not sacrificed to the exigencies of fiction or satire."

The New York Academy of Medicine.—The programmes of meetings of sections to be held during the remainder of April include the following:

Section in Laryngology and Rhinology, Tuesday evening, April 24th.—Brief answers to the questions: "How do you treat Hypertrophies of the Middle Turbinated Bodies in contact with the Septum?" and "What will prevent Excessive Granulations after Removal of Obstructions from the Nasal Chamber?"; and a paper on "Intranasal Exostosis and the Method of Treatment," by Dr. D. H. Goodwillie.

Section in Pædiatrics, Wednesday evening, April 25th.—"Some Recent Views on the Pathology and Treatment of Pertussis," by Dr. E. C. Wendt.

Section in Obstetrics and Gynæcology, Thursday evening, April 26th.—"Some Unusual Cases of Pelvic Abscess, and their Treatment," by Dr. J. B. Hunter; and "A New Suture-fastener for Silver Wire, specially adapted for Operations upon the Cervix and Perinæum," by Dr. A. H. Goelet.

Section in Materia Medica and Therapeutics, Friday evening, April 27th.—"Therapeutic Remarks on Cocculus Indicus and Picrotoxine," by Dr. M. Putnam Jacobi.

"Scotch Oats Essence."—Dr. Herbert E. Smith, the professor of chemistry in the Department of Medicine in Yale University, writes us as follows, under date of April 14th: "I have recently had occasion to make a chemical examination of 'Scotch Oats Essence,' and have separated from the preparation a considerable quantity of morphine. Having since had my attention called to your note on this preparation in the last number of the Journal, it has occurred to me that you might be interested in learning of this confirmation of Dr. Eccles's results, obtained from another sample."

The South Carolina Medical Association.—At the annual meeting, held in Columbia, on the 11th and 12th inst., the following officers were elected for the ensuing year: President, Dr. C. R. Taber, of Fort Motte; first vice-president, Dr. George Howe, of Columbia; second vice-president, Dr. J. S. Hughson, of Sumter; third vice-president, Dr. S. M. Orr, of Anderson; recording secretary, Dr. W. P. Porcher, of Charleston; corresponding secretary, Dr. J. L. Dawson, Jr., of Charleston; treasurer, Dr. H. W. De Saussure, of Charleston.

The Gross Medical College, of Denver, held its commencement exercises on Tuesday evening, the 10th inst.

The Medical Department of Niagara University, of Buffalo, held its annual convocation on Tuesday evening, the 10th inst., when the degree of M. D. was conferred on twelve gentlemen. Dr. Henry Flood, of Elmira, delivered an address to the graduates. During the day, the Alumni Association held its third annual meeting. In the morning, addresses were delivered by Professor Thomas Lothrop and by the president of the association, Professor Floyd S. Crego. In the afternoon, the following programme was taken up: "Some of the Relations of Pathology to the Practice of Medicine and Surgery," by Dr. Frank W. Ross, of Elmira, N. Y.; "The Diagnosis of Contracted or Granular Kidney," by Dr. A. D. Lake, of Perrysburg, N. Y.; "An Inquiry into the Importance of Physical Culture as a Branch of Preventive Medicine," by Dr. William C. Bailey, of Albion, N. Y.; and "A Detailed Account of the Weir Mitchell Treatment," by Dr. Edward Angell, of Rochester, N. Y.

The Health of Boston.—During the week ending Saturday, April 14th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 21 cases and 10 deaths; scarlet fever, 17 cases and 1 death; typhoid fever, 7 cases and 5 deaths; measles, 32 cases and 1 death. There were also 43 deaths from consumption, 32 from pneumonia, 4 from whooping-cough, 15 from heart disease, 8 from bronchitis, and 7 from marasmus. The total number of deaths was 222, against 188 in the corresponding week last year.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending April 13th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 24th corresponded to an annual rate of 21·1 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Huddersfield, viz., 14·8, and the highest in Plymouth, viz., 37·6 in a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, 2 in Blackburn, 2 in Hull, 1 in Nottingham, 1 in Manchester, and 1 in Sunderland.

During the year 1887, 191,887 deaths were registered, being in the proportion of 20·8 in a thousand of the population, and including 332 deaths from small-pox, 278 of which occurred in Sheffield.

London.—One thousand six hundred and fifty-five deaths were registered during the week, including measles, 18; scarlet fever, 24; diphtheria, 17; whooping-cough, 80; enteric fever, 10; typhus, 1; diarrhœa and dysentery, 6. Diseases of the respiratory organs caused 457 deaths, and different forms of violence, 64. Four cases of suicide were registered. The deaths from all causes corresponded to an annual rate of 20·2 in a thousand. In greater London 2,064 deaths were registered, corresponding to an annual rate of 19·5 in a thousand of the population. In the "outer ring" 23 deaths from whooping-cough; scarlet fever, 7; diphtheria, 8; and fever, 6, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending March 24th in the sixteen principal town districts of Ireland was 30·8 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 9·6, and the highest in Waterford, viz., 48·6 in a thousand. In Dublin 201 deaths were registered, including 4 from whooping-cough; measles, 5; scarlet fever, 4; typhus, 1; dysentery, 2; diarrhœa, 1; and erysipelas, 1.

Catania, Italy.—Four thousand and thirty-one deaths were registered during the year 1887, including 679 from cholera.

Fayal.—The United States consul, in his dispatch dated March 15, 1888, says:

"I deem it proper to inform the Department that the variola has been and is raging with intensity in the neighboring island of Torceera, and I should have done this sooner were it a place visited by our shipping. At St. Michael's it is spoken of as being in a couple of villages, but not in the town. At Fayal it has been introduced twice within a year from Torceera, but in both instances was stamped out. I shall keep you informed of its progress in the islands. The variola is not classed by the Portuguese authorities as one of the infectious diseases, and they give clean bills of health at times, notwithstanding its presence."

Santiago de Cuba.—The United States sanitary inspector reports for the week ending March 31, 1888, "one death from yellow fever at the military hospital, and two cases under treatment. Several cases of varioloid have appeared this week."

Havana.—Six deaths from yellow fever and 12 from small-pox are reported for the week ending March 31, 1888. During the month of March there were 567 deaths registered, including yellow fever, 14; small-pox, 85; enteric fever, 9; so-called pernicious fever, 12. . . . The sanitary inspector states that "small-pox continues to slowly diminish in and immediately around Havana, but in some towns a few miles out of the city it is increasing, as in Alquizar, Santiago de las Vegas, while others are being invaded by the pestilence. Cienfuegos and Sagua are still suffering very much from it."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM— Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	March 24.	2,260,945	1,120	..	...	6	....	11	13	40
Glasgow	March 24.	545,678	275	..	....	....	....	2	6	1
Warsaw	March 17.	439,174	215	..	....	6	....	....	3	4
Calcutta	February 25.	433,219	219	46	....	....	....	1	....	....
Amsterdam	March 17.	389,916	185	..	....	....	...	1	1	1
Amsterdam	March 24.	389,916	175	..	....	....	....	1	....	2
Munich	March 10.	275,000	172	..	....	1	....	....	3	6
Munich	March 17.	275,000	154	..	....	....	....	4	2	3
Palermo	March 24.	250,000	114	..	....	....	....	....	....	2
Belfast	March 24.	227,022	121	..	....	...	....	2	....	1
Genoa	March 24.	179,362	101	..	....	5	2	....	...	1
Leipsic	March 24.	170,000	74	..	....	....	....	....	....	7
Stuttgart	March 24.	125,510	34	..	....	....	....	....	....	....
Bremen	March 22.	122,000	40	..	...	....	...	....	....	....
Leghorn	March 25.	101,718	39	..	..	....	....	....	....	....
Cadiz	March 24.	65,028	49	..	....	....	....	....	....	....
Cienfuegos	March 26.	40,573	28	..	....	15	....	....	....	....
Cienfuegos	April 2.	40,573	21	..	...	13	....	....	....	....
Gibraltar	March 18.	23,661	5	..	....	....	....	....	....	....
Antigua	March 23.	15,847	8	..	....	....	....	....	....	....
Sagua la Grande.	March 24.	15,605	17	..	...	5	....	....	....	....
Sagua la Grande.	March 31.	15,605	11	..	1	3	....	...	....	....
Cartagena	March 24.	13,000	3	..	....	....	....	....	....	....

UNITED STATES.

Charleston.—The medical officer in charge of the Marine-Hospital Service reported, under date of the 7th inst., that "a seaman from the schooner Lillie F. Schmidt, out of New York on the 19th ult., presented himself for treatment at this office to-day. I found him to be suffering with small-pox, on the fourth day of the eruption, and have reported the fact to the health authorities of the city, who have taken charge of the case. It is probable that he will be sent to the quarantine station."

The vessel was immediately towed to the quarantine station in the harbor, by direction of the health officer, and on the 9th inst. sent to the United States quarantine station at Sapelo Sound, where the vessel is now undergoing quarantine.

Norfolk.—The medical officer in charge of the Marine-Hospital Service reported, under date of the 5th inst., the removal of a seaman from St. Vincent Hospital to the city pest-house, suffering with small-pox. The patient came from New York on the schooner Henry Parker. The vessel and crew are now undergoing quarantine.

ANSWERS TO CORRESPONDENTS.

No. 175.—It has been done, but always, so far as our information goes, unsuccessfully. Success has been reported in the case of tendons, however.

No. 176.—We do not think the lime will injure the preparation, except perhaps by causing excessive shrinking of the cartilaginous portions. To guard against that, it will be well to examine it from time to time, and, if the result alluded to appears imminent, trust to immersion in ether for any further removal of fat that may be necessary. We thank you for the circulars.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

THE CARTWRIGHT LECTURES
ON
THE GENERAL PATHOLOGY OF FEVER.

DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

By WILLIAM H. WELCH, M. D., Baltimore,
PROFESSOR OF PATHOLOGY IN THE JOHNS HOPKINS UNIVERSITY.

Lecture III.

THE ÆTIOLOGY OF FEVER.

Thursday, April 12, 1888.

We considered in the last lecture the experimental evidence concerning the effects of increased bodily temperature. An advantage of the experimental over the clinical method of investigating this subject is that it enables us to study the effects of heat upon the whole body and its various functions, without the intervention of disturbing factors, such as infection, which complicate the clinical analysis of febrile phenomena with reference to this question.

We found that animals might be kept at high febrile temperatures for at least three weeks without manifesting any serious symptoms. The only functional disturbances which could be attributed directly to the influence of the elevated temperature were increased frequency of respiration and quickened pulse. The rapid respiration was found to be due partly to stimulation of the skin by external heat and by the warmed blood, and partly to the action of the warmed blood on the respiratory centers. The quickened pulse could be positively referred to the effect of the warmer blood upon the heart itself. No definite relation could be established between the variations of arterial tension which occur in fever and the height of the temperature.

Although the experiments narrated showed that prolonged high temperature was an element in the causation of fatty degeneration of the heart, they also indicated that other factors, such as infection, were concerned in the production of this lesion. Moreover, experimental evidence was found in support of clinical facts showing that this alteration may exist without serious interference with the functions of the heart, so that the conclusion seemed justified that failure of the heart's power in fever was less an effect of high temperature than of other concomitant conditions.

Of the other disturbances in fever, we learned that the increased consumption of tissue could be explained only in relatively small part by the elevation of temperature. The lessened perspiration, the renal disorders, and the digestive disturbances (with the possible exception of constipation) are referable also chiefly to other causes than the increased temperature. Both experimental and clinical observations strongly support the view, now widely accepted, that the disturbances of the sensorium which constitute so prominent a part of the group of so-called typhoid symptoms are dependent in far higher degree upon infection or intoxication than upon the heightened temperature.

Although no attempt was made to analyze in detail the clinical evidence relating to the effects of high temperature, attention was called to the fact that the absence of all serious symptoms in many cases of relapsing fever and in the so-called aseptic fevers, in spite of prolonged high temperatures, strongly supported the conclusions derived from the experimental study of the effects of heat upon man and animals. Even in fevers, such as typhoid fever and pneumonia, where the height of the temperature is undoubtedly a most important index of the severity of the disease, there exists no such parallelism between the temperature and the nature and the severity of the other symptoms as we should expect if these symptoms were caused by the increased heat of the body.

It was emphasized that the results of experimental investigations should not be permitted to control the treatment of fevers, more particularly the use of so-called antipyretic agents. These agents, whether hydrotherapeutic or medicinal, influence, as is well known, many functions besides reducing the temperature. I need only refer to the powerful influence of cold baths upon the circulation and the nervous system, and to the action of antipyrine and other antithermic drugs upon the nervous system.

Reasons were given for assigning to hyperpyrexia and insolation a position separate from other febrile conditions in the discussion as to the effects of elevated temperature.

Before leaving this subject of the effects of increased temperature, I wish to call attention to one consideration which should perhaps influence our opinion on this much-disputed question. Is it a matter of indifference, so far as the effects of febrile temperatures are concerned, in what manner the increase of temperature is brought about? We have seen that heat-regulation, heat-production, and heat-loss are disturbed in fever, but, as experience shows, not always in the same manner or the same degree. In one case the inco-ordination of the regulating mechanism may be most apparent, the temperature fluctuating strangely up and down; in another case the heat-producing processes are excited to the utmost; and in another the circulatory changes in the skin, the vaso-motor disturbances, are the most prominent phenomena. Now, this varying interplay of the factors which cause febrile rise of temperature doubtless corresponds to varying conditions of innervation, of structure, and of function of certain tissues of the body. May we not resonably suppose that these varying conditions of the tissues directly associated with the rise of temperature may influence their tolerance of increased body heat? We have not the experimental or the clinical data which would enable us to give a definite answer to the question here propounded, and it would lead me too far from the theme of the present lecture to attempt to sift the equivocal evidence which might be gathered. I suggest this question, however, as one worthy of more attention than it has hitherto received.

I wish now to invite your attention to some considerations concerning the ætiology of fever. In this era, when ætiological studies occupy the foremost rank in medical science, it will naturally be expected that a discussion of the general pathology of fever, even though it does not aim at completeness, will not leave wholly untouched the ætiological aspect of the subject.

The general ætiology of fever relates mainly to a consideration of the agents producing fever, the so-called pyrogenic substances. It is, moreover, only certain general characters of these agents which can be properly considered here. Most of the questions which at present engage so prominently the attention of physicians concerning the specific causes of individual fevers belong, of course, to the special ætiology of fevers, and therefore do not lie within the limits of our subject. But even with these limitations we can not, in treating of the general ætiology of fever, consider the febrile process so much in the abstract as we have done hitherto. We must come into closer contact with the individual forms of fever.

At the start it should be said that probably in no instance are we acquainted with the actual substance or substances upon which the febrile disorder of animal heat immediately and directly depends. We deal here, as elsewhere in medicine, not with direct but with remote causes. But in no department of ætiology have we advanced nearer the proximate causes than in many of the infectious fevers. To be convinced of the immense progress which has been brought about by the ætiological study of fevers, let one pick up some of the older books on fevers—such as Percy's or Solle's,* with their endless divisions into symptomatic genera and species and their barren speculations. Percy, for instance, describes no fewer than one hundred and fifteen different kinds of fevers.

In all ages it has been customary to divide fevers into two great groups—viz., those which are secondary to some local cause, usually an inflammation, and those which can not be explained by the presence of any local lesion. The explanation of the symptomatic seemed so much clearer than that of the essential fevers that attempts have repeatedly been made to place all fevers in the symptomatic group. It is a curious fact that the two methods which have been of the greatest service in the study of fever, each, when first introduced, led to an entire misconception of the nature of fever. Boerhaave, who was the first to make any extensive use of the thermometer at the bedside, supposed that this instrument indicated a reduction of the bodily temperature during the febrile chill. He therefore taught that increased frequency of the pulse, and not the elevation of temperature, was the constant and essential symptom of fever. If we except de Haen's correction, which never became widely known, it was not until the middle of the present century that Boerhaave's error was overthrown. A no less serious misconception sprang from the study of the pathological anatomy of fevers in France during the early part of the present century. The exaggerated ideas of the immediate followers of Bichat as to what could be accomplished by pathological anatomy led them to the belief, for a long time widely accepted, that there was no such thing as an essential fever, that all fevers were symptomatic of some local disease. This error of Broussais, one of the most influential and eloquent medical teachers of this century, is plainly traceable partly to the fact that his autopsies were chiefly of typhoid fever, and partly to the belief that the lesions found at the autopsy sufficed to explain all of the manifestations of the disease during life. But we need not stop to trace the fate of the various attempts to overthrow the doctrine of essential fevers. I have mentioned one attempt chiefly on account of the suggestive lessons it conveys, rather than from a desire to enter into historical details, which I have hitherto purposely avoided.

The division of fevers into symptomatic and essential fevers is one of undoubted practical utility, and is not likely to be abandoned. But it can not truthfully be said that this popular classification has been of much assistance in advancing our knowledge. Close inspection shows that the boundary-lines between the two groups of fevers are vague and shadowy. Probably no one any longer believes that traumatic fever, the principal type of the symptomatic group, is due to increased production of heat in the seat of inflammation, which, acting like a furnace, was once thought to warm the whole organism, or to the irritation of nerves connected with the inflamed region. The opinion of Billroth and of Weber is now generally accepted, that traumatic fevers are caused by the absorption of pyrogenic substances from the inflamed district. Symptomatic fevers, as well as essential fevers, therefore, are dependent upon the presence of fever-producing agents within the blood. Many essential fevers, moreover, resemble the symptomatic ones in the existence of inflammation or necrosis at the portal where there is reason to believe that the pyrogenic agents gain access to the general circulation. A distinction in these cases can not be based on the ground that in symptomatic fevers only chemical substances, although possibly the products of bacteria, enter the circulation, and in essential fevers micro-organisms invade the blood; for such a distinction would place cholera, and possibly tetanus and typhoid fever, among the symptomatic fevers. These considerations show how vague and unsatisfactory are the distinctions between symptomatic and essential fevers. Still, similar criticisms can be made of many of our artificial classifications, which Nature is under no compact to observe, and we should undoubtedly be put to great inconvenience if we attempted to dispense with the epithets symptomatic and essential as applicable to different forms of fever. There are, however, other points of view which seem to me more fruitful in the study of the ætiology of fever than those embodied in these distinctions. I refer to the differences in the nature of fever-producing agents, concerning which our knowledge, although still very imperfect, has been materially increased within recent years. And here again we are greatly indebted to the results of experiments upon animals.

Much light has been shed upon the causes of a certain class of fevers by a series of experiments which received their impulse from the important studies of Alexander Schmidt and his pupils upon the physiology of the blood. A particular direction was given to these experiments by the often-repeated observation that fever and other injurious effects might follow the transfusion of blood, especially when the blood of one species of animal was transfused into an animal of another species. In order to test the supposition that these bad symptoms were due to an excess of fibrin ferment, Köhler[*] injected into the vessels of animals blood made rich in fibrin ferment and fibrinoplastic substance, and found that this blood, when injected in large amount into the jugular vein, caused sudden death by rapid coagulation of the blood in the right heart and pulmonary arteries, but, when injected in smaller amount or in a different manner, produced a typical febrile attack bearing a close resemblance to that following the injection of putrid fluids. Angerer[†] then found that a similar fever, although less intense and more gradual in its development, might be produced by the injection of blood into the peritoneal cavity or the subcutaneous tissue, or even by an extravasation of blood. Although in these experiments it was believed that fibrin ferment was the pyrogenic agent, Edelberg[‡] was the first to produce fever and other symptoms of intoxication by the injection of this ferment isolated according to Schmidt's method.

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* Percy, "Die gesammte Fieberlehre," Pesth, 1820 [the original is in French]; Solle, "Rudimenta pyretologiæ methodicæ," Berolini, 1773.

In the light of these experiments it was to be expected that other ferments would be examined with reference to their pyrogenic power. Schmiedeberg[#] discovered that injections of histozyme into the blood of dogs produced high fever associated with general illness, and particularly with diarrhœa. The ferment to which Schmiedeberg has given the name histozyme he believes to be present normally in small amount in the body and to be concerned in the dissociation of the nitrogenous constituents of the tissues. He concludes from his experiments that an excessive accumulation of this normal ferment in the body gives rise to fever with increased metamorphosis of nitrogenous material. Schmiedeberg thinks it probable that the fibrin ferment solutions employed by Edelberg in his experiments contained also histozyme, and that the pyrexia was due to the latter substance.

Following those observations concerning the pyrogenic power of fibrin ferment and histozyme comes the discovery by von Bergmann and Angerer[‖] that injections of pepsin and of trypsin into the blood of dogs cause a well-marked fever with characters like those of the other ferment intoxications described. A valuable calorimetrical study of pepsin and trypsin fevers has been made by Wood, Reichert, and Hare.[△] These authors, as well as Ott,[◊] have demonstrated that it is not the pepsin and the trypsin ferments themselves which constitute the pyrogenic agents, but some contaminating substance which seems to be a peptone. That peptones artificially prepared contain poisonous principles has been known for some time, and Brieger[*] has succeeded in isolating a crystallizable poisonous ptomaine, called peptotoxine, from commercial peptone and from that formed by the artificial digestion of fibrin. This ptomaine, however, is not identical with the pyrogenic agent found by Ott and by Wood and his colleagues in commercial pepsin. To this list of pyrogenic substances obtained from impure ferments may be added leucine, and, according to Ott, papayotin and neurine, which produce marked fever when injected into the blood in small quantity. The substance sold under the name of papoid possesses marked pyrogenic power when its filtered aqueous solution is injected into the blood. This substance contains principles belonging to the peptone, or albumose, group. Dr. Mall, fellow in pathology at the Johns Hopkins University, has isolated from commercial papoid a bacillus which in pure cultivation exerts a powerful peptonizing action on fibrin and on connective and elastic tissues. The bacillus itself is not pathogenic, but an albumose or some similar substance produced by its activity has pyrogenic power when injected into the blood.

It does not appear that any one has actually isolated the pyrexial agent from the various ferments employed in these experiments. Certainly no such agent has been obtained in a crystalline form, which is the test of its purity, if we except Brieger's peptotoxine, the pyrogenic capacity of which has not been established. It has been alleged that the fever-producing agent is the same in all of these ferment intoxications, but this has not been proved nor does it seem probable.

On better grounds it has been urged by von Bergmann and Angerer that all of the substances in the group of pyrexial agents now under consideration cause fever by producing the same change in the blood. These authors maintain that this change is the formation of an excessive amount of fibrin ferment in the circulating blood, which leads either to coagulation or to stasis in the capillaries, particularly those of the lungs and of the intestines. One of the main arguments for this view is the fall of blood-pressure which von Bergmann and Angerer observed after injections of pepsin and of pancreatin, but this fall can be explained in other ways than by supposing that the pulmonary capillaries are occluded, and, moreover, Wood, Reichert, and Hare find that the blood-pressure often rises in the course of pepsin fever. It does not seem to me that we are any more able to explain in exactly what manner the pyrogenic substances act in this class of fevers than in other fevers. The idea, however, that the liberation of the fibrin ferment in abnormal quantity is capable of causing fever finds support not only in experiments which have been mentioned, but also in the fact that injections of hæmoglobin solutions and of large quantities of water into the blood produce fever.

But you perhaps by this time have asked yourselves what bearing all of these experiments with various pyrogenic substances have upon the ætiology of human fevers. They have, in my judgment, an important bearing on this subject. However obscure may be the explanation of the mode of action of these substances, however doubtful may be their exact chemical composition, they have certain common characteristics which are calculated to shed light upon the causation of some obscure febrile disorders of human beings. In the first place, the members of this group of pyrogenic substances, if not identical with certain physiological ferments, are readily produced by them, quite independently of the action of bacteria or other micro-organisms. In the second place, some of these substances are present normally in small amount in the body, and, if their elimination is impeded or their formation is excessive, there is reason to believe that they become efficient causes of fever. In the third place, these pyrogenic substances may be produced, again without the action of bacteria, in extravasated blood or by the abnormal disintegration of tissues, and, if they are absorbed from these sources in such a condition or in so large an amount that Nature can not render them harmless, they are capable of producing fever. It is customary to call the morbid condition produced by the absorption of these substances ferment intoxication, in analogy with the term putrid intoxication, applied to the diseases caused by the absorption of the products of putrefactive bacteria. The term ferment intoxication seems to me to imply more than our knowledge warrants, but it is not of much use to contend against names which have gained currency. It is probable that some of the pyrogenic agents in this group belong to the class of leucomaines, but our present information regarding these bodies does not justify any positive statements on this point.

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[*] Köhler, "Ueber Thrombose und Transfusion," u. s. w., Inaug.-Diss., Dorpat, 1877.

[†] Angerer, "Klin. u. exp. Untersuch. üb. d. Resorption von Blutextravasaten," Diss., Dorpat, 1879.

[‡] Edelberg, "Arch. f. exp. Path. u. Pharm.," Bd. xii.

[#] Schmiedeberg, *ibid.*, Bd. xiv.

[‖] Von Bergmann u. Angerer, "Die Verhältniss d. Fermentintoxicaion," Festschrift, Würzburger Universität, 1882, i, p. 135.

[△] Wood, Reichert, and Hare, "Therapeutic Gazette," 1886.

[◊] Ott, "Journal of Physiology," vol. viii.

[*] Brieger, "Ueber Ptomaine," Berlin, 1885.

Although the ætiology of individual fevers does not belong to our subject, I can not forbear calling your attention to certain febrile conditions which seem to be produced by the accumulation of substances that either are normal constituents of the body or are the result of chemical processes differing but little from physiological ones.

To this category probably belongs the so-called aseptic fever first described by Genzmer and Volkmann.* These surgeons have established the fact that there are traumatic fevers not caused by the absorption of septic material, and that severe injuries and wounds which pursue an entirely aseptic course are not infrequently associated with considerable elevation of temperature. This aseptic fever is usually to be observed with extensive wounds or injuries in which there is much lacerated tissue or extravasated blood to be disintegrated and absorbed. It occurs not only with wounds correctly treated by antiseptic methods, but also with subcutaneous injuries, particularly fractures of the large bones, where there can be no suspicion of the action of bacteria. Aseptic traumatic fever differs by such marked characteristics from septic fever that there can be no doubt that the two types of fever are ætiologically distinct. Aseptic fever has no prognostic significance; its only symptoms are the elevation of the temperature, which may mount to 104° F. (40° C.), or even 105·8° F. (41° C.), and the increased frequency of the pulse. The entire absence of all of the intoxication symptoms of septic and infectious fevers, such as the benumbed sensorium, the dry tongue and skin, the lessened secretion of urine, I have already referred to in confirmation of the belief that these symptoms are not dependent upon the rise of temperature. Genzmer and Volkmann assign as the cause of aseptic traumatic fever the absorption of substances resulting from the disintegration of the wounded tissues and of the extravasated blood, and state that these substances probably do not differ markedly from those produced by physiological tissue metamorphoses. This explanation certainly has received decided support by the experiments which I have described in this lecture, a large part of which have been performed since the publication of Genzmer and Volkmann's article. It has been suggested that aseptic traumatic fever is a reflex neurosis, and this suggestion can not be absolutely rejected as a possible explanation, but, for various reasons, which can not here receive further consideration, the usually accepted explanation is the more probable one.

An instructive case of ferment intoxication has been reported by Cramer.† There existed in a young woman a cyst of the size of a goose's egg between the fibers of the semitendinosus muscle. The cyst was developed from a cavernous angeioma, and was filled with dark fluid blood. The patient had had fever for almost two years up to the day of the operation. The cause of the fever could not be discovered. Immediately after the removal of the cyst the fever stopped and did not return. In this case the cavernous structure of the cyst-wall accounts for the ease with which we must suppose a considerable quantity of the pyrogenic substance was continuously absorbed from the bloody contents of the cyst. The results of Angerer's experiments, already mentioned, enable us to explain the source of the fever in this case.

Another instance may be cited in which fever is probably to be explained by the accumulation within the body of products of normal metabolism. More or less fever appears to be a constant accompaniment of the agonizing method of treatment known as the Schroth cure. In this treatment the patient is kept for a number of successive days on dry food with scarcely any fluids. Both Bartels and Jurgensen,‡ who have investigated the nutritive changes of individuals under this treatment, believe that the body becomes so poor in water that some of the products of regressive metamorphosis can not be carried out of the system. This certainly seems very probable, and, if true, it affords, in the light of recent experiments, an explanation of the accompanying fever.

I believe that good reasons can be adduced in support of the opinion that the febrile conditions sometimes associated with leucocythæmia, profound anæmias, and chlorosis belong to the group of fevers we are now considering. It is possible that some of the obscure ephemeral fevers are also to be included here. But to consider these febrile disorders in detail would lead us into the domain of special ætiology, upon which we have already perhaps encroached too far. My purpose has been to bring before your attention only a few clinical examples in illustration of the experimental results.

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* Genzmer u. Volkmann, Volkmann's "Sammlung," No. 121.

* Cramer, "Verhandl. d. deutschen Gesellschaft f. Chirurgie," 13tes Congress, 1884.

† Jurgensen, "Deutsches Arch. f. klin. Med.," Bd. i.

I think that you will agree with me in the conclusion that experimental and clinical evidence justify us in recognizing as a distinct group of pyrogenic agents substances which have no necessary connection with micro-organisms, and which either are not foreign to the healthy organism or are readily formed by unorganized ferments from normal or abnormal constituents of the body. These substances may be described as homologous, in distinction from the heterologous agents concerned in the production of septic and infectious fevers.

A class of pyrogenic agents of far greater clinical importance than those previously considered is formed by the products of micro-organisms which in themselves are not pathogenic. A considerable number of bacteria which, when inoculated in pure cultivation into the body, are not capable of further invasion or of multiplication, produce in cultivation fluids and in dead animal or vegetable material poisonous substances often of great virulence. Exception may be taken to the description of these organisms as non-pathogenic, inasmuch as the products of their activity are poisonous, but the epithet pathogenic is usually assigned by bacteriologists only to such micro-organisms as are capable of multiplication within the body. If we called all of the micro-organisms pathogenic which produce poisonous ptomaines, we should have to include in this category a far larger number of the known species of bacteria than has hitherto been customary.

The best known and most important of the fevers produced by chemical products of saprophytic bacteria are those grouped under the name putrid intoxication. Until the introduction of the latest era in bateriology, by Koch, nearly all of the experimental work on the ætiology of fevers related to the causation of the septic and putrid fevers. It is instructive with our present knowledge to follow the experiments on this subject from the period of Gaspard, Magendie, and Sédillot up to recent times. What light has been shed upon the mass of contradictory and perplexing results of experiments with putrid fluids by the recent chemical and biological studies of putrefactive processes! Some of the putrid substances experimented with undoubtedly contained parasitic micro-organisms, and others contained only obligatory saprophytes; some were rich in poisonous ptomaines, and others were nearly devoid of them. The whole doctrine of the parasitic nature of infectious fevers seems to have hinged in the minds of some upon the determination of the question whether septic and putrid fevers are produced by the absorption of chemical substances or by the invasion of pathogenic bacteria. The ideas concerning putrid intoxication dominated at one time the whole field of fever ætiology, and were applied not only to septicæmia, but to typhoid fever, typhus fever, yellow fever—in fact, to nearly all infectious fevers. Nor have the echoes of this period even now entirely died out.

Panum was the first to isolate from putrid materials some chemical substance or substances in tolerable purity, certainly free from bacteria. This substance, when injected into animals, produced symptoms of putrid intoxication. Subsequently von Bergmann and Schmiedeberg isolated from putrefying yeast a poisonous crystalline substance, their celebrated sepsin. For a time the opinion prevailed that this sepsin was the source of all putrid intoxications. Thanks to the investigations of Nencki and others, and particularly of Brieger, we now know that many alkaloidal substances can be separated from putrefying materials. Some of these so-called cadaveric alkaloids, or ptomaines, are poisonous, fever-producing; others are harmless. There is no reason to suppose that the list of the ptomaines of putrefaction has been exhausted, nor is it necessary to believe that all of the poisonous constituents of putrefying materials are of an alkaloidal nature.

Most of the bacteria concerned in ordinary putrefactive processes are purely saprophytic. They are incapable of multiplication in the living animal tissues. In a mixture of putrefactive bacteria it is not, however, uncommon to find genuine pathogenic or parasitic bacteria. It was from such sources that the bacilli of mouse septicæmia and of rabbit septicæmia (Koch) were obtained. The bacillus of malignant œdema is also often found in the early stages of postmortem decomposition.

There is, of course, no doubt that the absorption of the chemical products of putrefaction may produce fever with septic symptoms quite independently of the penetration and multiplication of bacteria within living tissues.

Here belong certain cases, usually described as septic, in which fever and other bad symptoms subside upon the thorough cleansing and disinfection of a foul wound or of a puerperal uterus. The majority of cases of septicæmia are not to be included here, for they depend upon the invasion of pathogenic bacteria. But, excluding the cases of genuine septicæmia, there remain the putrid intoxications which result from the absorption of poisonous substances produced in necrotic or disintegrating tissues, or exudations, or extravasated blood by the action of purely saprophytic bacteria. The ideas which I have expressed on this subject are now so generally admitted that they require no further elucidation.

It is probable that fever with symptoms of intoxication, although generally of a much milder nature than in the class of cases just considered, may be produced by abnormal fermentations and putrefactions caused by saprophytic bacteria in the alimentary canal. But here the essential morbid conditions seem to be abnormities in the gastric and intestinal contents, due partly to the character of the ingesta, but chiefly to alterations of the digestive juices. Fermentative and putrefactive bacteria are normally present in the intestinal canal, and have abundant opportunities to gain access to this situation. The number, however, which can multiply and thrive there is quite limited, for, under normal conditions, according to Escherich, only such bacteria can multiply to any extent in the intestinal canal as are capable of growing with little or no oxygen and of deriving their nourishment from the anaerobic fermentation of the food supplied to them in this situation.

Of a far more serious nature are the putrid or ptomaine intoxications which result from the ingestion of substances which have undergone outside of the body putrefaction or changes which lead to the formation of poisonous ptomaines. To this group of cases belong at least many of the instances of poisoning which have been caused by eating certain kinds of meat, sausage, fish, cheese, etc. In some of these instances poisonous ptomaines have been isolated from the suspected substances; but we know scarcely anything of the micro-organisms which are concerned in their production.

It is important to bear in mind that it is not stinking putrefaction alone which gives rise to poisonous products. Brieger has found that such products may be absent in very advanced decomposition, and that, in general, the most virulent products are formed in the early stages of putrefaction. We know, furthermore, that putrefactions and fermentations differ in the character of their products. There are differences according to the kind of bacteria present, according to the substances decomposed, and according to various other conditions, such as the presence of oxygen, the temperature, etc. This is not the proper occasion to discuss these details.

Enough has been said to prove that we are justified in recognizing as a second class of pyrogenic agents substances which are the products of bacteria in themselves not pathogenic. These pyrogenic agents may be formed on or within the body, or they may be produced outside of the body. I would not, by any means, have you infer that it has been proved, in all of the special examples which I have mentioned, that the bacteria involved are not pathogenic or capable of multiplication within the living tissues. We have not sufficient knowledge to assert or to deny this in every instance, but I do not think that it is likely exception will be taken to the classification which I have adopted for most of these cases. As has repeatedly been mentioned, our purpose here is not an analysis of individual cases of fever, but an attempt to classify systematically the various pyrogenic substances.

We come now to the third and most important group of fever-producing agents, the pathogenic micro-organisms. So overshadowing is their importance that it has been maintained that they are the sole causes of fever. In contrast with former times, it is no longer the symptomatic fevers whose ætiology is clearest. We have much more definite ideas as to the mode of production of some of the essential fevers, which were once the most obscure, than we have of symptomatic fevers. It does not seem to me worth while to go over the chain of evidence which establishes the doctrine that the infectious fevers are caused by micro-organisms. There is probably no one who has thoroughly investigated the subject and is competent to form an opinion on it who does not to-day admit that a number of infectious diseases have been proved to depend upon specific micro-organisms, and that it is a logical inference that all infectious diseases are caused by parasitic organisms.

It is not germane to our subject to enter into a morphological or biological description of the different species of pathogenic organisms which are causes of febrile diseases. The only question which concerns us in this consideration of the general ætiology of fever is how the micro-organisms produce fever. Are they themselves the pyrogenic agents, or do they produce chemical substances which are pyrogenic? A number of other possibilities might be mentioned. These and similar questions have suggested themselves to investigators since the beginning of any knowledge of parasitic micro-organisms. Our information is far from sufficient to enable us to answer these questions in a positive manner, and still we are not left wholly to vague surmises in attempting to form some sort of an opinion.

That bacteria can produce mechanical effects by plugging up capillaries and in other ways is certain; but the wide differences presented by the various infectious diseases can not be reconciled with the idea that pathogenic bacteria act chiefly by mere mechanical interference with the fluid and the solid constituents of the body. Notwithstanding the fact that Stricker and Albert succeeded in producing fever by the injection of starch granules into the blood, probably no one will be inclined to attribute the pyrogenic activity of bacteria in any considerable extent to occlusion of blood-vessels.

In a certain number of infectious diseases, particularly of animals, bacteria are present in such enormous number in the blood and tissues that some are inclined to refer the disastrous effects of the organisms to the withdrawal of oxygen and other nutritive pabulum from the cells of the body. So far as the appropriation of oxygen is concerned, this idea is not supported by the results of most of the examinations of the blood in cases of anthrax. This explanation was more popular in the early days of bacteriology than it is at present, and at the best its value is limited, for it can not be applied to a large number of infectious diseases, such as cholera or typhoid fever, where the circulating blood is not largely invaded by the parasites. Furthermore, it is not clear how the appropriation by bacteria of nutriment intended for the tissues would help us to explain the production of fever.

It has been suggested that the increased temperature in infectious fevers may be explained by the heat produced by oxidation or other chemical changes in the micro-organisms themselves. But this is not at all a satisfactory explanation. Not only is the quantity of heat which can come from this source in all probability very small compared with that constantly produced in the body, but such an explanation of febrile rise of temperature is not in harmony with what we know concerning the mode of production of fever (see Lecture I).

The failure to explain the pathogenic power of bacteria in these and similar ways led to the supposition that the morbid activity of pathogenic bacteria was exerted chiefly by means of injurious chemical products. The demonstration of such products leaves no room for doubt as to the correctness of this supposition for some infectious diseases. This explanation is probable for most such diseases, but experience has shown that it is particularly dangerous to indulge in hasty generalizations in this department of medical science.

Sterilized and filtered cultivations, particularly old cultivations, of various pathogenic bacteria are capable of producing fever and other symptoms when injected into the blood or tissues. This, of course, makes it evident that the bacteria in question give rise to poisonous substances. It is necessary to distinguish between the intoxication produced by the injurious products of bacteria and the infection caused by the multiplication of the micro-organisms within the body. That this distinction may be readily overlooked is shown by the recent experiments with the inoculation into animals of pure cultivations of the typhoid bacillus. Small quantities of these cultivations may be inoculated without any apparent effect; if, however, larger quantities are injected into the veins or the peritoneal cavity of a rabbit, the animal dies in a short time, and the characteristic bacilli are found in the blood, in the spleen, and elsewhere. It was supposed by Fraenkel and Simmonds,* to whom we owe this latter observation, that actual infection took place, but it has been demonstrated by Sirotinin, and by Beumer and Peiper,† that under these circumstances no multiplication of the injected bacilli occurs, and that the same results may be obtained by the injection of sterilized typhoid cultivations.

The isolation in a chemically pure state of the poisonous products of pathogenic bacteria encounters great difficulties, and we owe to Brieger ‡ nearly all that has been accomplished in this direction. Two substances which he has obtained from cultivations of pathogenic bacteria are of great interest. Brieger isolated from pure cultivations of the typhoid bacillus a very poisonous ptomaine, or toxine, as he prefers to call this group of substances. He has given to it the name typho-toxine. It may be somewhat significant that he failed to find typho-toxine in a cultivation which had stood for twenty-four hours at a temperature of 102·2° F. (39° C.). The injection of typho-toxine into guinea-pigs produced great muscular weakness, diarrhœa, increased frequency of pulse and of respiration, and death. Nothing is said as to the effect upon the temperature of the animal.

A toxine has been isolated by Brieger in a crystalline form from an impure cultivation of the tetanus bacillus. This substance, called tetanine, produces, when injected into animals, the characteristic symptoms of tetanus.

It is evident that these important discoveries render far more definite than was formerly possible the belief that bacteria produce fever by means of their chemical products.

A dangerous influence exerted by poisonous ptomaines is that under their agency the power of the body of resisting the invasion of various micro-organisms may be impaired or overcome. Thus, Wyssokowitsch has shown that the immunity of some animals against certain species of bacteria may be destroyed by ptomaine poisoning.

In order to observe the effects upon the temperature, I have injected into rabbits sterilized cultivations of the typhoid bacillus. Injections of very small quantities of these cultivations produce no effects; somewhat larger amounts cause a rise of temperature without other marked symptoms; still larger quantities produce increased temperature, diarrhœa, weakness, and other manifest symptoms of severe illness, but the animal may recover; relatively large amounts are followed by a fall of temperature, grave illness, and death. I have also obtained results similar to those of Sirotinin, who inoculated two rabbits with the same amount of a typhoid cultivation. In one rabbit fever developed and the animal recovered; in the other the temperature fell after the injection and the animal died. This certainly does not indicate that the rise of temperature in itself is an unwelcome attendant of intoxication with the poisonous products of bacteria. My experiments certainly showed that the animals were more likely to die after injection of typhoid cultivations when the temperature fell than when it rose, independently of the quantity of material injected. One is reminded here of the very malignant cases of typhoid fever reported by Fraentzel and others, in which the temperature throughout a great part of the disease was subfebrile, or even at times subnormal.

In no disease is the dependence of the febrile paroxysm upon the presence of bacteria so apparent as in relapsing fever, where, according to the statements of most, although not of all, observers, the spirilla appear in the blood at the beginning of a paroxysm and disappear at the end. Whether or not here and in malarial fever the pyrogenic agent is a chemical product of the micro-organisms causing the disease we do not know.

I must content myself with having brought before you evidence showing that at least in some of the infectious fevers the specific bacteria produce pyrogenic substances. We have no right to say that this is the only way in which pathogenic bacteria can cause fever.

We have considered now three groups of agents concerned in the production of fever, viz.: first, unorganized ferments and other relatively homologous substances; second, ptomaines and other chemical products of saprophytic micro-organisms; third, pathogenic micro-organisms and their chemical products.

It is not to be understood that these groups correspond to sharply defined classes of fever-producing agents. The same substance may be produced by the action of unorganized ferments as well as by saprophytic bacteria or by parasitic bacteria; hence we may find the same fever-producing agent in each of the three groups. As has already been mentioned, our knowledge does not justify us in regarding these various substances as the immediate and direct pyrogenic agents. The epithet pyrogenic is applied to them only by a certain latitude of signification. It is possible that these various substances which we are in the habit of describing as pyrogenic may produce in the body some common change which gives rise to the real fever-producing agent. This is the view of von Bergmann and Angerer, who believe that this common change is a liberation of fibrin ferment by destruction of leucocytes. While we can not consider this view as more than a hypothesis, it is nevertheless well to remember that apparently heterogeneous substances which are usually designated as pyrogenic may produce similar changes, which are to be regarded as the real source of the febrile disorder of animal heat. But, notwithstanding these limitations and those elements of uncertainty, it seems to me that some such classification as that suggested of the agents producing fever is more useful than that usually employed in the discussions of the ætiology of symptomatic and of essential fevers.

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* Fraenkel and Simmonds, "Die ätiologische Bedeutung des Typhus-Bacillus," Hamburg und Leipzig, 1886.

† Sirotinin, "Zeitschrift f. Hygiene," Bd. i, p. 465; Beumer u. Peiper, *ibid.*, p. 489.

‡ Brieger, "Untersuchungen über Ptomaine," Berlin, 1886.

There is one point which must be impressed upon every one who makes many experiments with pyrexial agents. This is that once in a while a substance of undoubted pyrogenic power causes a fall instead of a rise of temperature. This occurs frequently when the substance is injected in large quantity, and under these circumstances there is usually produced a condition of collapse. But in exceptional cases the same dose which will cause in one animal a rise of temperature may give rise in another animal of the same species to a distinct reduction of temperature. In these latter cases there must be some idiosyncrasy on the part of the animal. Aronsohn* refers this unusual phenomenon to some peculiarity of the heat centers in the brain, and he draws an interesting parallel between this contrary effect of pyrogenic substances and the exceptional cases in which antipyretic drugs give rise to elevation instead of lowering of temperature.

The causes of fever which we have thus far discussed have been substances which exert a pyrogenic effect when introduced into the circulation. We suppose that those substances act in some way upon the nervous system, but whether or not this action is a primary one it is impossible to say. Even if we assume, as is often done, that these substances incite directly in the blood and tissues chemical changes which lead to increased production of heat, we must still have recourse to some action upon the nervous system, as has already been sufficiently set forth in the previous lectures.

It can not be doubted that fever may be caused by other agencies than pyrogenic substances present in the blood or tissues. The effects of exposure to external heat have already been considered. We found experimental evidence in support of the view ably advocated by H. C. Wood that, in typical cases of thermic fever or sunstroke, the strain placed upon the heat-regulating centers by exposure to excessive heat results in paralysis of these centers with rapid elevation of the external temperature.

The cause of the elevation of temperature in tetanus is not altogether clear. In this disease the temperature may vary but little from the normal, but it is not uncommon to find excessive elevations of temperature toward the termination. Temperatures of 113° F. (45° C.) or more have been recorded. The idea would naturally suggest itself that the rise of temperature is due to the tetanic muscular spasms, which we know to be accompanied by production of heat. Leyden was led to adopt this explanation by the results of experiments made upon animals. He succeeded, by producing violent tetanic contractions of the muscles of a dog, in raising the internal temperature in the course of an hour and a half from 103·3° F. (39·6° C.) to 112·6° F. (44·8° C.). Clinical observations, however, do not support the supposition that the hyperpyretic temperatures of tetanus are dependent upon the muscular contractions. In spite of violent and prolonged tetanic spasms, the internal temperature may remain normal, or be but slightly elevated. There is a decided similarity between the hyperpyrexia of tetanus and that which occurs in rheumatism and some other diseases, particularly in affections of the central nervous system, and it certainly seems probable that in all of these cases there is a profound disturbance of the heat-regulating centers. As the elimination of urea in tetanus is not excessive, we find additional reason to separate tetanic hyperpyrexia from ordinary febrile conditions. Recent investigations of the ætiology of tetanus have rendered it certain that at least some forms of this disease are caused by infection with a special micro-organism. This has been demonstrated not only in the tetanus of animals, but also in that of human beings. The tetanus bacillus has been found wide-spread in the ground in Germany, and I find it abundant also in the ground in Baltimore and its neighborhood. In experimental tetanus the specific bacillus, which has not yet been obtained in perfectly pure cultivation, develops chiefly in the tissues near the seat of inoculation, and does not invade other parts of the body and the blood to any great extent. This indicates that the symptoms are referable chiefly to poisoning by some chemical products of the specific micro-organism. As has already been mentioned, this view is sustained by Brieger's discovery in cultivations containing the tetanus bacillus of a peculiar ptomaine which he has called tetanine, which produces tonic spasms of the muscles. It is therefore reasonable to believe that the hyperpyrexia of tetanus is caused by the action of poisonous products of the tetanus bacillus on the nervous centers concerned in temperature regulation. Our present knowledge, however, does not warrant us in asserting that all forms of tetanus in human beings are of an infectious nature.

In the first lecture of this course evidence was presented to show that pyrexia may be caused by affections of the nervous system without the agency of any pyrogenic substance. It may jar upon the sensibilities of some to call this form of pyrexia fever; but this hesitation can be due only to the idea that symptoms which are referable to infection or intoxication are essential to the conception of fever. In my judgment, we shall be led into confusion if we attempt to incorporate into our definition of fever more than properly belongs to the febrile disorder of animal heat, and from this point of view there can be no impropriety in designating as fever the pyrexia dependent directly upon affections of the nervous system.

It is not necessary to repeat here the conclusive experimental evidence for the existence in the nervous system of centers or regions which control the dissipation of heat and the chemical processes concerned in the production of heat. Those who are not much impressed by experiments upon animals can hardly fail to be convinced by the clinical evidence, which demonstrates that lesions of the nervous system may cause elevation of temperature that can not be referred to the action of any pyrogenic substance. Such evidence must, of course, be collected from cases where the fever can not be explained by inflammation, bed-sores, or other lesions which can give rise to absorption fever.

W. Hale White,* in the interesting article already referred to, has collected a number of cases of tumor, hæmorrhage, softening, sclerosis, injury, and functional disturbance of the spinal cord and brain in which the pyrexia or hyperpyrexia is to be explained only by the lesion of the nervous system. The number of such cases might be considerably increased. These cases show that lesions of the cervical part of the cord, of the pons, of the corpus striatum, and of the neighboring white matter are most likely to be associated with high temperature, but the cases hitherto reported hardly justify positive statements as to the exact situation in men of thermically active nerves or regions in the brain and spinal cord. As might be expected, not only focal lesions, but also diffuse diseases, such as occur in general paralysis of the insane, locomotor ataxia, and multiple sclerosis, may give rise to pyrexia which sometimes assumes the form of temperature crises. It is in harmony with what we know of other disorders of the nervous system to find that not only demonstrable anatomical lesions, but also functional disturbances, may produce nervous pyrexia. Such functional disturbance furnishes the most probable explanation of the singular and erratic elevations of temperature which have been occasionally observed in hysteria.

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* Aronsohn, "Deutsche med. Wochenschrift," 1886.

* W. Hale White, "The Theory of a Heat Center from a Clinical Point of View," "Guy's Hospital Reports," vol. xlii, 1884.

A question which merits more consideration than it is possible to give to it on the present occasion relates to the possibility of the occurrence of fever as a reflex neurosis. The advance in our knowledge of the ætiology of traumatic and inflammatory fevers has pushed aside almost wholly the old doctrine of irritative fever. There are, however, cases of fever where still the simplest and apparently most rational explanation of the causation is peripheral nerve irritation. As examples, may be mentioned the fever resulting from teething in children, that sometimes accompanying the passage of gall-stones or urinary calculi, and that occasionally following the insertion of a catheter into the urethra. It must be admitted that the evidence on this point is not conclusive. Especially is there lack of satisfactory experimental evidence. Electrical irritation of the exposed sciatic nerve is, under ordinary circumstances, followed by a moderate fall of temperature, although Ott * finds that in atropinized cats such irritation is followed by a decided rise of temperature. But these experiments can not be held to weigh for or against the doctrine of irritative fever. Observations on human beings indicate that peripheral nerve irritation, if ever a cause of fever, is so only in certain situations and under certain forms of stimulation and in certain individuals. In infants, temperature regulation is more labile than in adults, so that it may be that nerve irritation can more readily disturb the temperature in the former than in the latter. The chief controversy as to the question now before us has been as to the explanation of certain forms of urethral or catheter fever. It can not be doubted that a large number, probably most, of the cases of so-called urethral fever are instances of genuine absorption fever. Even if we exclude all cases with diseased kidneys, or with cystitis or other inflammatory disease of the urinary passages, there remains a certain number of cases in which the gentle insertion of a disinfected catheter is followed by distinct febrile reaction. It seems unwarrantable to assume that in all of these cases the catheter has caused a laceration of the urethra through which pyrogenic substances are absorbed. What is the nature and whence the source of these substances? In the cases now under consideration they can be sought only in the normal urine, and of their existence there no proof has been afforded. In these cases it is certainly very difficult to understand how the fever can be interpreted as due to the absorption of some pyrogenic agent, and, failing this explanation, the idea that the fever is dependent upon nerve irritation is most plausible.

I have now presented to you an imperfect survey of the general ætiology of fever. The attempt has been made to classify the leading causes of fever, but it can not be maintained that every variety of fever can be assigned to one of these groups of causes. Our knowledge of the ætiology of special fevers is still too imperfect to warrant any such generalization. This is an attractive field for much patient investigation. I need only remind you of the uncertainty which still pertains to the causation of many of the fevers of warm countries. There is reason to believe that there remain yet to be differentiated ætiologically specific types of fever which occur among us, and particularly in our Southern States. It may be that increasing knowledge will necessitate the recognition of varieties of pyrogenic agents entirely distinct from any with which we are now familiar. It is certain that future investigations will add clearness and precision to our ideas of the nature and mode of action of causes of fever which, at the best, we can now understand only imperfectly.

I can not conclude this course of lectures without saying a word on a subject which must engage the attention of every one who gives much thought to the nature of fever. What is the significance of fever? is a question which thrusts itself upon us no less than it has upon physicians in all ages. Unfortunately, we can not to-day, any more than could our predecessors, give other than a speculative answer to this question. There have been in all ages enlightened physicians who have held the opinion that fever is a process which aids in the elimination or destruction of injurious substances which gain access to the body. Under the influence of ideas which sought in increased temperature the origin of the grave symptoms of fever, we have in recent times, in great part, lost sight of the doctrine once prevalent, that there may be in fever a conservative element. There is much which speaks in favor of this doctrine. The real enemy in most fevers is the noxious substance which invades the body, and there is nothing to prevent us from believing that fever is a weapon employed by nature to combat the assaults of this enemy. The doctrine of evolution indicates that a process which characterizes the reaction of all warm-blooded animals against the invasion of a host of harmful substances has not been developed to such an extent, and is not retained with such pertinacity, without subserving some useful purpose. This is a point of view from which many pathological processes can be regarded with advantage. Even suppuration, which one does not generally look upon as a beneficent provision, is a most important instrument of nature in forming a barrier against

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* Ott, "Therapeutic Gazette," August, 1887.

general infection of the body with certain micro-organisms. It is impossible with our present knowledge to say in exactly what way fever accomplishes a useful purpose. There are facts which suggest that in some cases of fever the increased temperature as such may impair the vitality or check the virulence of pathogenic micro-organisms, but there are many circumstances which make it difficult to suppose that this is the agency by which fever usually exerts a favorable action. The supposition seems to me more probable that the increased oxidation of fever aids in the destruction of injurious substances. According to this view, the fever-producing agents light the fire which consumes them. It is not incompatible with this conception of fever to suppose that the fire may prove injurious also to the patient, and may require the controlling hand of the physician. Time will not permit me to elaborate further the ideas here suggested. In the course of these lectures some facts have been presented, and others might be drawn from clinical and experimental observations, which favor the hypothesis that fever is, in a certain sense, a conservative process. Unproved and intangible as the hypothesis may seem to some, no apology is needed for bringing to your attention a conception of fever in favor of which much can be adduced, and which, if true, is of fundamental importance, both theoretically and practically.

Original Communications.

ON THE PRIMARY REMOVAL, BY ABDOMINAL SECTION, OF THE TUBE AND ITS CONTAINED FŒTUS IN CASES IN WHICH PREGNANCY HAS BEEN DIAGNOSTICATED BEFORE RUPTURE OF ANY PORTION OF THE TUBE HAS OCCURRED.*

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By "primary" abdominal section in these cases I mean abdominal section performed for the removal of the tube and its contained fœtus *before any* hæmorrhage has occurred into the peritoneal cavity from a rupture, or a *partial* rupture, of the cyst wall, the pregnancy having been diagnosticated prior to the laparotomy, and the operation having been performed with the expectation of delivering the tube and its contained fœtus *intact*. Furthermore, the operation must have been done before the end of the fourth month of the gestation.

In a paper by the author, written for the meeting of the American Gynæcological Society in September, 1886, and published in that society's "Transactions" for that year, in speaking of the time at which laparotomy should be done in cases of tubal pregnancy, I made the following statement: "That, in cases where a moderate hæmorrhage has been positively diagnosticated (whether from a rupture of a superficial artery or a venous plexus, or from a partial rupture of the sac itself), and this hæmorrhage has occurred prior to the termination of the fourth month of gestation, it is undoubtedly better surgery to perform laparotomy at once, and thus remove all possible danger of further hæmorrhage, than to trust to electricity in any form. Cases of this kind, in which a positive diagnosis can be made, have been rare up to the present time, principally, I think, from the fact that the full significance of the so-called 'colicky pains,' with the shock and collapse, has hardly been appreciated. I am convinced that in these attacks there is always some bleeding, it may be very slight, from the superficial vessels of the sac, and that, as a rule, several (three or four) attacks occur before the real rupture of the sac takes place. If I am right in this, it seems to me that in all such cases, where the symptoms of hæmorrhage *are becoming* at all alarming, we should at once resort to laparotomy. In all cases in which hæmorrhage has been considerable there will, as a rule, be a *decided* tear in the sac, and in such cases it seems to me that laparotomy is demanded as soon as the patient rallies from the shock sufficiently to have a fair prospect of recovery from the operation."

At a meeting of the New York Obstetrical Society, held on December 7, 1886, in referring to a case in which I had diagnosticated tubal pregnancy at the fifth week, and in which death had occurred at the end of the seventh week of gestation from a *second* hæmorrhage from a ruptured artery on the peritoneal surface of the sac (the first hæmorrhage, which was extremely small, having occurred from this same artery nine days previously, and galvanism having been employed in the mean time to destroy the fœtus), I said: "I infer from this case (and three others similar) that in all cases of tubal pregnancy where transient collapse symptoms suddenly appeared from the fifth to the seventh week of gestation, or even a little later, there was a rupture of one of the superficial vessels of the sac; but the final catastrophe, severe hæmorrhage, did not occur until later. The time to operate was when this preliminary or partial rupture occurred; indeed, the primary collapse symptoms constituted an almost certain indication both of the pathological condition and of the need of immediate interference."

In speaking of the symptoms of tubal pregnancy I stated that I believed it was easier to recognize this condition than a case of hydrosalpinx; that the presence of an irregular decidual discharge in a woman who had missed a period, associated with the normal signs of pregnancy and an enlarging, fluctuating, and exquisitely sensitive mass on one side of the uterus, and subsequent symptoms of shock, could hardly be referred to any other condition even as early as the fifth week. "In a case of this kind," I said "I should certainly *perform laparotomy whenever the first symptoms of internal hæmorrhage occurred.*"

At the January meeting (1887) of the Obstetric Section of the Academy of Medicine, when this subject was under discussion I closed my remarks by saying that "in any case in which, from the rational and physical symptoms, I became convinced that I had to deal with a tubal pregnancy, *even before* symptoms of a rupture of the peritoneal covering of the tube occurred, I should most earnestly urge laparotomy, and perform it if I could obtain the consent of the patient. Even if mistaken in my diagnosis, I should certainly find something which ought to be treated surgically."

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* Read before the New York County Medical Association, April 16, 1888.

Up to the present date I find but one case on record in which the operation has been performed prior to a laceration or a partial laceration of the tube and before the fourth month of gestation. This case is reported in the March number of the "Annals of Gynæcology," of Boston, and is No. 3 in a list of four cases of extra-uterine pregnancy operated upon by abdominal section by Dr. Joseph Price, of Philadelphia. The report of the case has come to my knowledge since the first of this month, although the operation was performed successfully on September 11, 1887. Dr. Price, under date of April 7, 1888, to me, says: "The history was simply that of *delayed bleeding two weeks, constant pain, and nausea.* I operated for 'extra-uterine pregnancy or pus tube.'" I believe that in *all* other cases in which laparotomy has been performed in these cases of tubal pregnancy one or more decided hæmorrhages have occurred prior to the removal of the tube and fœtus. Mr. Lawson Tait has reported thirty-six operations of this latter kind done during the past three years, with thirty-five recoveries. In several of these cases the fœtus was not found, but evidences of a laceration of the tube and consequent serious hæmorrhage were found. The clots and tube, and the fœtus, when found, were removed, and, as before stated, thirty-five women were successfully treated by this method. At the last meeting of the American Gynæcological Society, held in this city in September, 1887, Professor A. Martin, of Berlin, reported nine cases in which he had performed abdominal section for tubal pregnancies, with but one death. I can not state positively, but, from his remarks at the meeting and from subsequent conversation with him upon the subject, I feel safe in saying that in all these cases there had been decided symptoms of hæmorrhage and shock prior to the operation. Quite a number of other cases, similar as to time and attendant conditions, have been reported from Germany. In our own country during the past two years I find one successful case reported by Dr. A. W. Johnstone, of Danville, Ky., operated upon by abdominal section on November 6, 1886, *after* several attacks of hæmorrhage and shock going over a period of one month preceding the operation. The fœtus was three months old. Dr. Johnstone had diagnosticated the condition on October 6th, at the date of the first hæmorrhage, when, in all probability, the bleeding was simply from a superficial vessel on the peritoneal covering of the sac.

The second case as to date of operation is reported by Dr. Joseph Price, of Philadelphia, and stands "No. 1" in his series of four cases of extra-uterine pregnancies before alluded to. In this case the tube and contents were removed, together with blood-clots filling the pelvic cavity, at the end of the seventh week. The operation was successful, and resulted in complete recovery.

The third case is reported by Dr. S. C. Gordon, of Portland, Me., in the February 4, 1888, number of the "N. Y. Med. Journal," and was operated upon on September 24, 1887, the day following the rupture of the sac. There had been a large amount of bleeding—three pints—into the peritoneal cavity. Dr. Hitchcock, of Rockland, Me., the attending physician, had diagnosticated tubal pregnancy in this case a week before the rupture occurred. Gestation was three months advanced, and the result of the operation was complete recovery.

The fourth case was reported by Dr. William Gardner, of Montreal, at the Montreal Medico-chirurgical Society's meeting, February 17, 1888. This was a case of rupture of the right tube, followed by severe hæmorrhage and collapse, at the sixth or seventh week of gestation. Abdominal section was performed. The tube, with the fœtus imbedded in the blood-clots, was removed. Result, recovery.

I have also (within the past three days) learned from Dr. Charles B. Penrose, of Philadelphia, that he has operated successfully upon a case in which the pregnancy had advanced two months, and in which the rupture of the tube took place only a few hours before the operation. Dr. Penrose had believed the case to be one of tubal pregnancy ten days before the rupture occurred, and had advised laparotomy at that time. This case stands No. 5 in the list of these operations in this country. Dr. Penrose, under date of April 14, 1888, writes me as follows: "The cyst was of about the size of an ordinary orange. It was in the outer third of the tube, and the cyst-wall (membrane) could be plainly made out distinct from the structure of the tube. The inner two thirds of the tube was very slightly enlarged. The rupture seemed to be on the posterior surface of the tube. The ovary was not adherent to cyst or tube. There were about eight ounces of blood-clots in Douglas's *cul-de-sac.*"

The sixth case was operated upon by Dr. G. M. Tuttle, of New York, some two weeks since, and the specimen exhibited at the meeting of the New York Obstetrical Society on April 3, 1888. In this case also there had been rupture of the tube and hæmorrhage at about the eighth or ninth week of gestation. Tube, with contents and blood-clots, removed. Result, recovery.

In all these cases—those reported by Mr. Tait, A. Martin, and others abroad, and those reported in this country—with the bare exception of the one case, "No. 3," operated upon by Dr. Joseph Price last September, there had been a rupture of some part of the tube, and hæmorrhage had taken place *before* laparotomy was performed. All such cases I think should be classed as *secondary* operations. I believe that the credit of first urging the propriety of performing abdominal section and removing the ruptured tube, with the fœtus and blood-clots, is due to an American surgeon. I refer to the late Dr. Stephen Rogers, of this city, who, as far back as 1867, urged the merits of this operation in these cases.

The propriety of enlarging this field, and of removing the tube with its contained fœtus *before any* rupture has occurred and during the early weeks of gestation, instead of resorting to the use of electricity for the purpose of destroying the life of the fœtus, as stated at the beginning of this paper, I have advocated on every possible occasion during the past year and a half. I am aware that until very recently I have stood almost, if not quite, alone as to this point, but during the past few weeks I find that other and more expert gynæcologists than myself have come to the same conclusion, notably Mr. Lawson Tait, who (although he states that he has never been called to operate upon a case of tubal pregnancy until after the sac had ruptured) says, in the April, 1888, number of the "American Journal of Obstetrics": "If there was any reasonable supposition that there was a tubal pregnancy which had not yet ruptured, I should recommend immediate operation."

Dr. Joseph Price and Dr. Howard A. Kelly, of Philadelphia, I believe, are in accord with this proposition. The latter-named gentleman, in a recent letter to the writer of this paper, says: "The history of fœtuses which have been destroyed by faradization has frequently been associated with protracted suffering to the mother, and with conditions of chronic invalidism."

Dr. R. P. Harris, of Philadelphia, in the August, 1886, number of the "American Journal of Obstetrics," refers to several cases in which attacks of peritonitis have occurred (in cases in which the fœtus has been killed by electricity) several years subsequent to the death of the fœtus, and due to its presence in the abdominal cavity. Mr. Tait also has very recently, in the April, 1888, number of the same journal, pointed out the danger "that the placenta will go on developing enormously after the fœtus has died from natural causes."

On the other hand, up to the present date, the weight of opinion among American gynæcologists is decidedly in favor of destroying the fœtus by electricity in some form, in cases in which a diagnosis has been made prior to the fifth month of gestation, and in which there has been no decided hæmorrhage from the sac-wall.

Foremost among the advocates of this measure stand Thomas, Garrigues, Lusk, Mundé, and others of this city, and M. D. Mann, of Buffalo, and each of these gentlemen, as well as others of us throughout our country, have had excellent results by this method of treatment.

An excellent paper by Dr. Mann, of Buffalo, is published in the February, 1888, number of the "Annals of Gynæcology," of Boston. He asks this very pertinent question: "Granted that the diagnosis can generally be made early, have we a settled and reliable method of treatment?" and also states that "there is no more burning question before gynæcologists to-day." Dr. Mann further states—what is perfectly true—that "Dr. Janvrin was able to find only three cases in literature, including his own, where rupture of a vessel caused death without rupture of the sac." This statement is based upon my paper written for the American Gynæcological Society two years ago. Since then I have seen one other case in which this condition was fully demonstrated at the autopsy, evidences of a slight hæmorrhage having occurred from a vessel in the peritoneal covering of the sac some days prior to the secondary and fatal hæmorrhage (also from a superficial artery) having been found. In this case also the patient died before the surgeon in attendance had fully made up his mind to perform laparotomy.

Two other specimens I have recently seen, from cases in which abdominal section has been performed, in one of which the fœtus had died from pressure of blood-clots at about the end of the third month of gestation, several other attacks of hæmorrhage occurring between this date and the seventh month, when the tube, fœtus, clots, etc., were removed by Dr. Kletsch, of this city, everything being matted together by inflammatory processes, and the patient succumbing to the operation within a few days.

The second specimen, before alluded to as having been successfully removed at the seventh or eighth week of gestation by Dr. Tuttle, of this city, gave a history of slight hæmorrhage from the sac-wall, and slight peritonitis for a week or ten days prior to its removal by laparotomy. The specimen itself showed a small tear in the sac-wall which had evidently occurred but a day or two, I should judge, before the operation. I believe, therefore, as I have contended for the past two years, that in many—possibly all—of these cases of tubal pregnancy the hæmorrhage *begins* in the laceration of a blood-vessel in the peritoneal covering of the sac, simply by the greater distension of the outer coat during the development of the fœtus, and that this is evidenced by the first attack of colicky pain and collapse which occurs in these cases. Subsequent attacks of hæmorrhage occur until the sac finally ruptures, and then the only thing to do is to perform abdominal section and remove the lacerated tube, together with the escaped fœtus and the extravasated blood.

Mr. Tait has already given us a splendid record in these cases, as heretofore stated.

Dr. Mann, in speaking of these cases, says: "Laparotomy it must be"; but he adds: "If rupture has not occurred, . . . electricity should always take precedence." At the same time he refers to two cases in which, "after being killed by electricity, the fœtus has ulcerated its way out." To this proposition I would assent, provided no experienced laparotomist could be found to do the operation of abdominal section. Otherwise I would not assent to the rule as laid down by Dr. Mann. On the contrary, I would perform laparotomy, and urge upon every successful operator in that line to do the same, as early as the diagnosis has been established, and before any hæmorrhage from the sac, with its subsequent attacks of peritonitis, *could* possibly take place. These frequently recurring attacks of slight hæmorrhage are exceedingly dangerous to the life of the mother, and when they have occurred, and the time comes when abdominal section *must* be performed, the patient is in bad condition for the operation, and the operation itself is much more complicated.

The same may be said in reference to waiting to perform laparotomy until serious symptoms supervene (after the fœtus has been killed by electricity). Here, too, we have more or less adhesions to deal with, and the work to be done is much more complicated than the removal of a simply enlarged and unruptured tube containing the fœtus, in which there are no products of inflammatory processes to interfere with its easy extraction.

Note.—Since the foregoing was written my attention has been called by Dr. George T. Harrison, of this city, to the fact that in 1857 Kiwisch very strongly urged the propriety of performing abdominal section in cases of *ruptured* tubal-pregnancy sac, and gave a full description of his proposed operation, "Extirpation of the Entire Fruit-Sac, in which we should have to proceed as in Ovariotomy." This establishes Kiwisch's priority in cases of *ruptured* tube over that alleged for the late Dr. Stephen Rogers.

ON THE NON-IDENTITY OF CHANCRE AND CHANCROID.*

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GREEN ISLAND, N. Y.

First Question.—"Are the 'chancre' and 'chancroid' essentially different pathological processes, or do they originate in the same virus, modified in some way by the infecting or infected party?"

It has devolved upon me to open the discussion this evening by the consideration of a question which has taxed the minds, the ingenuity, the patience, and the fortitude of many of the most distinguished surgeons of modern times. A question, too, which has infused such enthusiasm into these earnest investigators as to cause them, through inoculative experiments performed upon themselves, to sacrifice their health and, in some cases, their lives. The outcome of all this labor has been a vast literature, written in many languages, and yet there has been no complete penetration of the veil of uncertainty which surrounds this question of the relationship between chancre and chancroid. The annals of this controversy afford one of the most interesting chapters in medical history, but the limitation of the time at our disposal forbids my entering upon this division of the subject. Neither is it my privilege to detail to you the results of elaborate experimentation, nor to present to you anything remarkably new; still, it is not a vain labor to review past studies, or to recall forgotten and neglected facts.

As, to a certain extent, my remarks must be of a judicial nature, it is demanded that the first step in our inquiry shall be the predicating of a definite meaning to the words "chancre" and "chancroid." It is admitted that all definitions exist by common consent, and are constantly undergoing a change, and, although it may seem to savor of "begging the question," nevertheless, permit me, as far as concerns the purposes of this paper, to define "chancre" as the name given to a lesion—usually an ulcer—commonly recognized by certain definite characteristics, which constitutes the first appreciable lesion in a slow, continued fever known as syphilis; and "chancroid" as the name collective given to several species of local ulcerative action, which almost invariably attack the genital organs, and are communicable, by contact only, from one individual to another, or to different parts of the same person. It is the reasonableness of these definitions that I shall attempt to maintain, in the first place considering the subject theoretically, and in the second from its practical side.

It is frequently, I admit, fallacious to reason by way of analogy, but where there is a lack of positive knowledge it seems to throw much light upon the subject under consideration, and at times to approach almost to certitude. Therefore, then, let us ascertain in what respects these sores correspond to the initial lesions of other well-recognized constitutional diseases.

There is a species of ulcer, usually contracted during sexual intercourse, which is, as a rule, multiple; there is another form of ulcer, usually contracted in the same way but far less so than the former, which, in the majority of instances, is single. Why is this so? Because we have observed that the acrid and violent nature of the first may cause a breech of continuity, and that where this happens an ulcer is formed similar to the one from which the virus originated; in addition, we have ascertained that almost always the development of the second form is conditioned by a previously existing denudation of the surface upon which it may have been deposited. The first of these sores can be inoculated indefinitely on any part of the body, while the second can not be so reproduced. The first develops almost immediately after exposure, but the second requires a long period of incubation—from three to five weeks—and herein we observe the first striking analogy, the one to local lesion, the other to that of constitutional disease. In the second variety the original abrasion is rapidly healed, but again becomes diseased at the end of the period of incubation, whereas in the first instance it is not so, but when once healed it remains so until a fresh inoculation has occurred. The second also obeys the law of most of the acute exanthemata in that one attack is nearly always protective against a second; also, again, it conforms to the law of the primary lesions of constitutional diseases in that there is little or no loss of tissue, whereas the first-mentioned sore is eminently destructive from the beginning. Herein, I think, we find the reason why the one is attended with much pain and the other with but little.

Now, for the purposes of this paper, the first of these sores has been called chancroid and the second chancre. The one is a disease in itself, the other a symptom of disease. The chancroid is a process of cell destruction; the chancre is a process of cell proliferation. The one totally destroys the cell with which it comes in contact; the other simply maims the cell it attacks during the life of said cell. As in the chancre there is a process of cell proliferation, its base soon becomes hard by reason of the number of the cells there deposited, and hence it has been called the indurated—the Hunterian—sore; and, on the other hand, as the other destroys every cell it attacks, its base remains soft. For like reasons the one is attended with copious secretion, the other with but little. The chancroid is annihilistic in its tendency, the chancre has a bias to the new-formative type of disease, and hereby it seems to tend to a malignant relationship. Like local diseases in general, the chancroidal poison can be destroyed by an early and thorough excision or use of the caustic; but it is not so with the chancre, for, like the initial lesions of typhoid, small-pox, scarlatina, etc., its excision or cauterization is of no avail. I am well aware that the protective power of the early excision of chancre has been alleged by a few observers, such as Auspitz and Kölliker, of Vienna; but the mass of the profession—that great court before which come all causes medical for their final trial—have not prevented syphilis by this means.

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* Read at a meeting of the Medical Association of Troy and Vicinity, March 6, 1888, as the opening paper in a discussion on syphilis.

The location of these two sores gives us much to theorize upon. The chancroidal type is rarely seen upon any other part of the body than the genital region, whilst the chancre, not being essentially a venereal disease, may be found upon any part whose surface may have become denuded of its epithelial covering. How like are all these distinctions to the points of demarkation which have been observed to separate the class of local from that of constitutional disorders!

You may have been surprised that I have said so little concerning the inoculative evidence in regard to the differentiation of these two sores, but to me it is a labyrinth of assertions and contradictions, one observer correcting a former investigator, to be in turn corrected himself. Balfour declared that gonorrhœa and syphilis were distinct; Hunter said that gonorrhœa and chancre were identical; Benjamin Bell contradicted Hunter, and so you find it *pro* and *con* all the way down to the present day.

I shall not be disputed when I assert that the thought of the world at large is ruled by fashion, and I beg to remind you that this holds true also of the medical world. The great fashion—the all-absorbing *crank*—of the present time is bacteria; hence these are the diseases in which, pre-eminently above all other disorders, we should expect to find specific micro-organisms. From time to time observers have professed to have found bacteria distinctive of the two forms of sore. In the "Lancet" for April 10, 1886, Eve and Lingard published the results of experiments made upon the various secretions of syphilitic patients and professed to have discovered a bacillus morphologically distinguished from all other bacilli. However, they failed to demonstrate that this bacillus had any relation to the disease other than its mere presence. Therefore the *Bacillus syphiliticus* is announced, but it has not yet been demonstrated; we are expectant, but, as you are well aware, everything bacteriological is *sub judice.*

It is more than probable that the chancroidal and chancre viruses are frequently deposited together on an undenuded surface, and that the one would not gain admittance to the system were it not for the corrosive action of the other. In connection with this statement let me call attention to the fact that there is, in another direction, an antagonism between the virus of chancre and that of chancroid, for von Zeissl, on page 8 of his work on the "Pathology and Treatment of Syphilis," maintains that the virus from a chancroid situated on a syphilitic person always gives rise to a soft sore. Now, these two ideas appear at first to be contradictory, but in reality they demonstrate an intense antagonism between the conditions of chancre and chancroid. Chancroid, by its intensity, may inhibit the production of the chancre virus, but when that virus has once been formed it is powerless against it. This, then, carries us to a point which we have all observed, that a local disease may so alter the manifestation of a previous constitutional condition in its vicinity as to cause it to lose many of its distinguishing characteristics.

Perhaps one of the most interesting of the theories which have been elaborated regarding the relationship existing between chancroid and chancre is that of Clerc, who maintained that the chancroid was a bastard product, the result of inoculating a syphilitic person with the virus of an infecting chancre, which was capable of propagating itself indefinitely, without assuming in any case the character of an infecting sore. This is interesting, but can never be anything more than an assertion; however, it recalls a fact which has frequently impressed me, and that is that the severest and most intractable forms of chancroid that I have ever seen have occurred in patients who had received mercurial treatment for secondary lesions. Whether this is owing to the existence of syphilis or the mercurial treatment I do not know, but it points out to me one of the strongest arguments yet adduced as regards the non-identity of chancroid and chancre. This point is the different effect that mercury has upon the two sores. What I shall say in the next few sentences is purely an hypothesis and highly imaginative, but I beg to remind you that the imagination has led to more discoveries than cool reason has. Mercury is known to be destructive to the organism as a whole—*e. g.*, it promotes the destructive metamorphosis. It will also remove the induration of a chancre rapidly and uniformly. What is the reason for this? Simply that the cells which have been affected by the virus of syphilis are so lowered in vitality that they can not withstand the further debilitating effect of mercury, and hence die, whilst the cells which are healthy, although damaged by this agent, are not so seriously injured but that they, in a measure, regain their former health when the drug has been withdrawn. Now, it causes chancroid to take on a phagedenic character, because it lowers the resisting power of the cells. Here now, again, these same sores act respectively like local and constitutional diseases, for nature resists local disease by the successive strength of the individual cell, but constitutional disorder by the united strength of all the cells in the body. Thus you see that the effect of mercury on these sores demonstrates that they are essentially different.

A part of our question asks us if there are individual peculiarities which may influence the inoculation of the syphilitic virus. I need but to mention the wide-spread prevalence of the disease, and the numerous chancres of contamination other than by sexual intercourse, to convince you that there are states of the system which are incompatible with the virus, or that, in the case of the infected individual, the discharges do not at all times possess the same amount of virulence. Undoubtedly there are persons who, by reason of idiosyncrasy, remain throughout life refractory to syphilis, the same as there are those who are refractory to various of the exanthemata.

That indeed, were it possible, would be a most instructive investigation which should discover how far the children of syphilitic parents, although not showing any signs of the inherited form of the disease, were refractory to chancre. Herein many find much consolation, for they look to the time when the human race shall all be protected by hereditary influence. Perhaps in this way we might account for the gradual decadence of the violence of syphilis, which has now been observed to have been in operation for a number of years. Finally, then, although we allow for the age, the occupation, the habits, the co-existence of other diseases, we still have to account for the diversity of the primary lesions by the personal peculiarities of any given patient.

The foregoing pertaineth to the theory; practically I say to you, in all earnestness, you can never know absolutely when you may have the one or the other, for in much knowledge is there also much sorrow. Tell your patient the probabilities; treat him as the learned gentlemen who are to follow me shall direct, but, with Sir Astley Cooper, make no positive assertions, but "wait the issue."

COMMENTS ON

DR. DETTWEILER'S METHOD OF TREATING PULMONARY CONSUMPTION.

By T. L. DIX, M. D.,
SHELBYVILLE, KY.

The very able appeal for the establishment of an institution for the "Rational Treatment of Pulmonary Consumption," by Dr. Kretzschmar, as published in the "New York Medical Journal" of February 18, 1888, contains several facts which are pregnant with physiological and pathological truths that are, in the estimation of the writer, of too great importance to pass unnoticed; and he considers this a sufficient reason for imposing this article upon the attention of the reader.

The facts alluded to may be enumerated as follows:

1. "The most liberal and, we might say, specific use of pure mountain air."

2. "The greatest importance is placed in 'resting' in the open air."

3. "The administration of a rich, liberal, and peculiarly adapted mode of diet," with milk, wine, and cognac.

These three particulars, the writer says, constitute "the strong points in Dettweiler's treatment of consumptives."

The object of this paper is to inquire into the influences these circumstances exert upon the consumptive. But it is necessary first to know the condition of the consumptive and the changes necessary for his restoration to health.

The dominant feature of the consumptive is the preponderance of the arterial over the venous system, which results in fibrinosis—a cardinal point in the establishment of tuberculosis. We will not enter upon a discussion of this part of the subject, but will be content with a reference to an article by the writer "On the Correlation of Alcohol, Rheumatism, and Phthisis," August 15th number of this Journal of 1885.

1. Mountain air overcomes arteriosis and produces venosity in two ways: First, by its attenuation the patient does not receive so much oxygen at each inhalation as when at the foot of the mountain; second, for each eighty-seven feet the mercury in the barometer falls one tenth of an inch; and, as Dr. Kretzschmar says the Falkenstein sanitarium is fourteen hundred feet above the sea-level, we have a fall of one inch and three fifths. Counting half a pound to the inch, we have nearly one pound less pressure to the square inch than when the patient is on the sea-level. It is a well-known fact that when heights are attained, the body being relieved of atmospheric pressure, the superficial veins are seen to expand, even to such an extent as to cause hæmorrhage from the mucous membranes. This circumstance empties the arteries and fills the veins, and brings the blood from the viscera to the surface; consequently there is not so much blood in the lungs to become oxidized, as well as not so much oxygen in the lungs to oxidize the blood. Thus we discover the fact that this attenuated mountain air affects the patient in a twofold manner in the production of venosity.

2. The great importance "in resting." It is not necessary to produce arguments to show that in a state of rest of both body and mind there is less oxidation produced within the body, and consequently less fibrination, than when in active exercise. The production of fibrinosis by exercise, and the results which are likely to follow, are pointed out in the article to which reference has already been made.

3. A rich and liberal diet, with milk and cognac. This is a factor, in the treatment of tuberculosis, of the greatest moment. The production of fats within the system by superalimentation to consume the oxygen, with the aid of alcoholic drinks, contributes largely to the production of venosity.

The interesting points connected with this subject are to supply the patient who finds the mountain sanitarium beyond his reach with efficient means of producing venosity and defibrination of his blood-mass when at home, and with the least expense. The attenuated atmosphere may be simulated by adopting such means as will prevent, in part, the air from entering the lungs. A gentleman who had consumption and had suffered several hæmorrhages, attributed his cure, in part, to the use of a small silver tube which he breathed through by wearing it in his mouth. The diminished atmospheric pressure can be simulated by the use of a cupping apparatus, which is made to embrace the entire body and limbs from the neck down. The diet should be of carbohydrates, with as little of nitrogenous food as may be found consistent with a healthy state of the economy. And the patient should be enjoined to remain in a recumbent position as many hours in the twenty-four as his circumstances will admit.

In conclusion, it is interesting to note the effects of superalimentation, as is demonstrated in Experiment No. 3, as stated by Dr. Kretzschmar. These five animals were "turned loose, and one died at the expiration of a month," whereas the five rabbits in Experiment No. 1 were "stinted in the quantity of food given them, while being themselves artificially infected with the tubercle bacillus." Four of these perished within three months, and the fifth one was killed four months after injection, and found to be tuberculous. Had these five rabbits enjoyed the same superalimentation as the five in the former experiment, although deprived of light and exercise, the results would have been far more favorable; while, upon the other hand, if those in Experiment No. 3 had been restrained from such excessive exercise, all perhaps would have survived.

Correspondence.

LETTER FROM PARIS.

Lannelongue on Tuberculosis.—Mercury in the Treatment of Mercurial Stomatitis.—Saccharin.

Paris, *April 12, 1888.*

Professor Lannelongue, of the Paris faculty, and surgeon to the Trousseau hospital, has contributed so much to the important revolution that has been accomplished during the last ten years in our doctrines concerning surgical tuberculosis that the appearance of his new book on "Tuberculose vertébrale" induces me to speak of his work. It has a double object: to show, first, that tuberculosis is to be found all over the body, in the bones, the articulations, the cellular tissues, etc.; then, secondly, to clear up the mass of foreign element that has been invading the great field of surgical tuberculosis. Since Lannelongue's teachings began it has become quite an easy matter to distinguish cases which only a short time ago were ranged in the obscure chapters of caries, necrosis, etc. Since 1878 he has labored to show what tuberculosis of the bones was and how its local manifestations acted. His *coxotuberculose* quite altered the aspects of hip-joint disease, and one may truly say that Pott's disease is now quite another matter, pathologically, than what it was in 1879, when our Professor Sayre declared in his work: "The disease which produced the deformity is *not tubercular* in character" (page 362). In describing vertebral tuberculosis Dr. Lannelongue gives it a much broader signification than our old name of Pott's disease, which was intended merely to mean the softening and breaking down of the bodies of the vertebræ. M. Lannelongue was the first to show that there were many other tubercular lesions than those of the bodies of the vertebræ, such as the one he calls *mal vertébral postérieur*, and three other important localizations, the suboccipital, the sacro iliac, and the sacro-coccygeal. The tuberculous abscesses, or *tuberculomata*, that are so frequently developed in connection with these diseases are simply an extension of the spinal tubercular focus, which itself was the result of the regression of a tubercular deposit. The bony lesions are the first, as to date, and from this point the fungus destroys the cartilages and penetrates the tissues. As a rule, such abscesses communicate with the bony lesion, but they may be independent of it, and start from one or several points, taking their origin from a tuberculogenic membrane, which plays the principal part in the increase of the abscess. This augmentation may sometimes take place upward, thus proving that they do not depend on the law of gravity. There are two new points in regard to symptoms that might be mentioned; first, that in many cases, months before the spinal lesion is found, there are occasional attacks of neuralgic convulsions, that are similar to epilepsy, but differ in the pain actually felt. These nervous accidents are often the cause of errors in diagnosis, and they should always receive important consideration in judging of such troubles, as treatment may lead to the prevention of paralysis if the case is seen in time. Again, in examining an old case of Pott's disease one may frequently find traces of a tubercular lesion in the form of cysts, that are often filled with a soft caseous matter, or sometimes with a hard cretaceous substance. Treatment should follow such a discovery, as these cysts may be, and often are, the starting-point of renewed trouble. I can not pass in review all the chapters of Professor Lannelongue's work, but must say a word or two on his treatment. He has adopted a therapeutic doctrine which is original with himself, but which is accepted by most of our European surgeons. In hip-joint disease he attributes the most important action to the compression caused by the contraction of the muscles in destroying the articular surfaces, and also to the effect of the local tuberculosis. The deformity of the head of the femur and of the cotyloid cavity results, in M. Lannelongue's opinion, from the compression and the consequent ulceration which aggravates the disease. On this basis he starts with his treatment, which, in one word, is *continued extension.* What is true for the hip joint is true also for the knee and the spine. In Pott's disease, whether it is located in the suboccipital region or in the sacro-coccygeal, the compression exercised is what should be prevented. Dr. Sayre's plaster jacket fulfills this important indication in some measure, but it is only useful in certain cases. What action can it have, for instance, in a Pott's disease located in the superior dorsal or the cervical region? Evidently none. The work under revision contains drawings showing the apparatuses used by Professor Lannelongue to secure the needed continued counter-extension. I can only add that they act on the base of the head above and on the pelvis below, but sometimes only on the shoulders above. Experience has shown them to be well supported by the little patients. They give perfect immobilization and continued extension.

It seems rather curious to treat an affection that has been produced by a drug by the same drug, but this is what is being tried here for mercurial salivation. It was first proposed by Professor De Renzi, of Naples. He found that the mouth in such cases was certainly the seat of very active decomposition, and he employed a 1-to-4,000 solution of corrosive sublimate, directing his patients to wash out the buccal cavity several times a day with the solution, but not to use more than half a pint in all in a day. This brought about a rapid cure in all his cases of mercurial stomatitis, even when there was considerable ulceration. From the first day the fœtid odor of the breath disappears, and by the third day there is hardly any swelling left, while the attack always ends in cure on the fifth day. It is often asked why it is that mercury, which is such a good antiseptic, produces a stomatitis, and one that so often presents itself in the form of a putrid fermentation. Dr. De Renzi gives a plausible theory. He says that the mercury does not produce it directly, but indirectly, by modifying the nutrition of the anatomical elements of the mouth, so that they become so feeble that they can not resist fermentation, which is always so ready to take place in the buccal cavity, filled as it is with all sorts of germs. The mercury, in fact, is like the alcohol in drunkards' pneumonias; they both prepare the ground for the implantation of the disease to follow, and, just as alcohol must not be withheld from such pneumonic patients, so can we secure, or at least aid, the cure of mercurial stomatitis by the use of the wash mentioned above. It is probable also that such a solution will cure fermentative stomatitis from other causes.

M. Worms reports to the Academy of Medicine that saccharin, given to four diabetic patients, caused in three of them dyspeptic troubles, such as a sensation of epigastric weight, loss of appetite, etc., so that he feels that there is a certain amount of risk in giving this new and unknown substance to such patients. The dose used was a grain and a half. Both M. Dujardin-Beaumetz and M. Constantin Paul stated, however, that, using it mixed with a sodium salt, forming a saccharate of sodium, they had not noticed any such troubles.

Intra-muscular Lipoma.—The "Lancet" says: "Exceptionally lipomata may develop in organs normally wanting in cellular adipose tissue. Their presence has been noted in the nerve centers, in the spinal cord, and in the thickness of muscles, even in the midst of the muscular fibers. These intra-muscular fatty tumors are more common in men than women, and are chiefly found in very active muscles, like the tongue, the heart, and the sartorius. M. Ribet has collected in his Parisian thesis many interesting observations on these tumors."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, APRIL 28, 1888.

THE JOHNS HOPKINS UNIVERSITY.

In our last issue we published the first of a proposed series of annual addresses before the Society of the Alumni of Bellevue Hospital, and this week we complete the publication of the course of Cartwright Lectures for the current year. It is not yet a decade since the first course of Cartwright Lectures was given, but they have already come to be looked forward to by the profession as reasonably sure to constitute matter well worth listening to or reading, embodying the fruit of the matured observation and thought of men of exceptional capacity or opportunities. This expectation has in the main been amply borne out, and never more so than by Dr. Welch's lectures on "The General Pathology of Fever." Dr. Welch's competence to deal adequately with such a puzzling, although familiar, subject need not be proclaimed; it is a fact of which all our readers are fully aware. They know also that his comprehensiveness of mental vision and his faculty of correlating facts are so pronounced as to preclude at the outset all danger of his falling into the error of magnifying the importance of laboratory work and depreciating that of clinical observation. Essentially a pathologist, he views pathology through the glass of every-day experience. Nothing could make of such a man a doctrinaire or an enthusiast. The days of Brownism, Broussaism, and the like, have passed away, it is true, but the scientific world is not yet wholly emancipated from the tendency to set up idols and then try to make facts bow down to them. It is therefore a matter for congratulation, although, as we have already said, not one calling for special statement, that a gentleman called upon to speak with the authority of a Cartwright lecturer—an authority not in this instance conferred by the invitation, but rather recognized by its being given—is so widely known for the qualities that have been mentioned.

No less is the young Society of the Alumni of Bellevue Hospital to be congratulated on its selection of Dr. Councilman to deliver the initial address of its series. "Predisposition in Tuberculosis," the theme chosen by Dr. Councilman, is one concerning which there might have been a great temptation for a mere laboratory man to repeat the famous chapter "On Snakes in Iceland." Far from making that blunder, Dr. Councilman judiciously accorded the utmost consideration consistent with facts to whatever foundation there may be for the predisposition theory of the ætiology of consumption. The subject was one that needed to be reviewed in just the temperate and readily comprehensible manner that Dr. Councilman adopted, and we do not doubt that his address will serve to clarify the thoughts and impressions of many a practitioner.

It is not unworthy of note that both Dr. Welch and Dr Councilman came from Baltimore to address their auditors; still less that they are both professors of pathology in the same institution, the Johns Hopkins University. Taking into account the short period of time that has elapsed since the university was established, we must view it as of good omen for its career, and especially as giving evidence of the discrimination with which the members of its medical faculty have been chosen, that two of its professors should have been called simultaneously to such important work as that of addressing the Alumni Association of the College of Physicians and Surgeons and the Society of the Alumni of Bellevue Hospital. The prominence already achieved by the Johns Hopkins University goes far as a token of Baltimore's progress as a seat of teaching institutions.

ALBUMINURIA AND DISEASE OF THE PLACENTA.

The pathology of the albuminuria of pregnancy is still involved in so much obscurity that any observation tending to throw light on the subject can not fail to be of interest. Fehling recently drew attention to the connection between nephritis and diseases of the placenta, and Wiedow, of Freiburg, takes up the subject anew in a recent number of the "Zeitschrift für Geburtshülfe und Gynäkologie." So long ago as 1860 the matter was under discussion by the Edinburgh Obstetrical Society. Since then several accoucheurs have noted the frequency with which morbid conditions of the placenta have been met with in conjunction with albuminuric eclampsia, but most of them have been content with observing that the placenta was diseased, or presented patches of fatty degeneration, without any closer inquiry into the pathological condition. But Wiedow has investigated the matter very thoroughly, and has made most careful microscopical examinations of the altered placental tissues. He gives the histories of six cases that he has observed at the Freiburg clinic. In some of them premature labor was induced, in others it occurred spontaneously, and in still others labor took place at full term, and the child either was still-born or died in a few hours. The placentæ presented numerous small, grayish-white nodules, which were seen under the microscope to consist of fibrous tissue considerably infiltrated with fat. The upper layers of the maternal portion contained muscle-cells and the usual decidual elements. The scanty villous tissue toward the fœtal surface was observed as small, round, whitish areas of about the size of a pin's head. The villi were devoid of epithelium, widely dilated at places, and filled with an amorphous substance. Their vessels showed thickening of the adventitia, with diminution of the lumen, and in some instances total closure. The closure had been brought about in two ways; in many vessels it was by a coagulated granular mass, and in others by a proliferation of the endothelial cells of the intima. Everywhere, even outside the nodules, the thickened adventitia showed a decidedly fibrillar structure inclosing spindle-shaped nuclei. Only one lobule presented a different condition; it was distended with blood. The membranes in the vicinity of the diseased lobules showed grayish-white elevations of fibrin.

Pathologists differ as to the character of the morbid process. Some of them, including Rokitansky, have held that it was of an inflammatory nature; others, like von Scanzoni, have said that it consisted in an effusion of blood. Hegar and Maier, who were among the first to make careful histological examinations, attributed the change to an interstitial inflammation, but quite recently Ackermann has expressed the conviction that the nodules are composed of coagula necrosed in consequence of periarteritis of the villi, and Wiedow's researches seem to confirm this view. A more difficult problem to solve is that of the relationship between the albuminuria and the placental disease. Is the albuminuria the cause or the effect? One's first impulse is to say that it is the cause, but the opposite view is not without some weighty arguments. In the majority of instances there is only the simple nephritis of pregnancy, to which so deleterious an effect can hardly be ascribed. Normal placentæ are found in women suffering with chronic nephritis; moreover, the first symptoms of renal irritation are frequently observed only after the embryo has been dead for a longer or shorter period. Furthermore, although the fœtus is sometimes expelled shortly after the onset of the symptoms of albuminuria, the placenta shows changes that must have taken some time in forming. Finally, if the kidney affection is the cause, how can the fact be explained that in cases of twins one of the placentæ may remain intact, as in one of the cases described by the author? But it would require a considerable stretch of one's speculative powers to assume that the nephritis was due to the occlusion of some of the vessels of the villi and the consequent increased arterial tension. Still another view is that both conditions are coincident results of a common cause, such as syphilis. It is evident that the subject offers a fertile field for further inquiry.

MINOR PARAGRAPHS.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Elsewhere in this issue we publish the preliminary programme of the next meeting of the association. Although the meeting is not to be held until September, the preliminary announcement gives the titles of thirty-three papers. This fact speaks in unmistakable terms for the efficiency of the secretary, Dr. Taylor. It is usually the unhappy fate of secretaries of such societies to fail to get responses to their queries as to papers almost up to the very time of their being compelled to print the final programmes in order to be able to have them at the meeting, to say nothing of getting them to members living at a distance. When we first mentioned the establishment of this association we ventured to predict a successful career for it, and it was largely on the strength of the well-known energy of the president and the secretary that we felt warranted in making such a forecast. Since that time we have been abundantly confirmed in our prediction, and the programme thus far arranged for the next meeting leaves no room for doubt as to the success of the occasion.

SIR MORELL MACKENZIE AND THE LONDON "TIMES."

It appears as if the Berlin correspondent of the London "Times" had systematically pursued a course, in his dispatches to his paper, calculated to put the most unfavorable aspect on Sir Morell Mackenzie's connection with the German Emperor's case, mainly by quoting from hostile articles in the German papers and keeping back all information as to the favorable notices printed in Germany, and even such corrections as have been published there. The correspondent seems to be a countryman of Sir Morell Mackenzie's, although that may not be the case; if it is, it makes the matter all the worse. At all events, he has followed the policy that marks him as eminently lacking in one of the qualities essential to a satisfactory correspondent.

THE LATE DR. AGNEW'S WILL.

It is announced that the late Dr. Cornelius Rea Agnew bequeathed all his property to his widow and children, and that the will contains the following sentence: "I wish particularly to express my regard for my associate, David Webster, a physician residing in New York, and for that purpose I request my executrixes and executor to give him, after my decease, such token of my regard for him as may to them seem proper." This, it seems to us, was an exceedingly delicate way chosen by Dr. Agnew to insure the spontaneity of the gift, whatever it may prove to be—a way quite in keeping with his exquisite tenderness of feeling. That, in Dr. Webster's eyes, it will clothe the token with an added value can not be doubted. Such cordiality as that with which Dr. Agnew and Dr. Webster worked together for years is not often observed, and it was fitting that it should be commemorated in such a manner.

THE RESPIRATORY FUNCTION OF THE NOSE.

It used to be held that the air inspired was warmed and moistened by the lungs. Two years ago Aschenbrandt showed that this was not the case, but that the air derived its absolute heat and humidity from the air-passages, and he concluded that it was chiefly in the nose that the thing was done. Now, however, Dr. Richard Kayser, of Breslau, has been over the ground anew, and, in an article published in the "Archiv für die gesammten Physiologie," an abstract of which is to be found in the "Centralblatt für klinische Medicin," drags the nose down from this particular niche of physiological dignity, and maintains that the warming and moistening of the air inspired are quite as well accomplished in the mouth and the pharynx.

"CHRISTIAN SCIENCE" IN MIDWIFERY.

"Christian science," which was lately denounced by a clergyman, in an after-dinner speech, as neither Christian nor science, has been tried in the town of Milford, Mass., in a case of midwifery, and, according to a press dispatch, the practitioner is likely to be tried in a court of law. The case resulted in the death of both the *accouchée* and the infant, and the apostle of "Christian science" was the dead woman's mother.

ITEMS, ETC.

The American Gynæcological Society.—The next meeting, which was appointed to be held in Boston, will be held in Washington, on the 18th, 19th, and 20th of September. It is understood that the change is made at the request of both the Washington and the Boston members, in order that the members may be present at the sessions of the Congress of American Physicians and Surgeons.

Dr. Thomas Keith, of Edinburgh, the famous laparotomist, having retired from the surgical staff of the Royal Infirmary, the "British Medical Journal" announces that the managers have adopted the following minute: "The managers, in accepting with regret the resignation of Dr. Thomas Keith, desire to record their sense of the importance and value of the work which, in conjunction with Mr. Skene Keith, he has done in the wards under his charge. They beg to convey to him their thanks for the skill and success with which he has performed his duties as extra surgeon for the treatment of ovarian diseases, the result of which has been much relief to suffering females, increase of credit to the Royal Infirmary, and enhancement of the reputation of the Edinburgh Surgical School."

The New York Post-graduate Medical School and Hospital.—Dr. J. E. Weeks, instructor in bacteriology, is about to begin a course in that branch.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending April 21, 1888:*

Percy, Henry T., Passed Assistant Surgeon. Detached from the Naval Academy, and ordered to the Naval Hospital, Washington, D. C.

Crawford, M. H., Passed Assistant Surgeon. Relieved from duty at the Naval Hospital, Washington, D. C., and to wait orders.

Flint, J. M., Surgeon. Relieved from Fish Commission duty and special duty at the Smithsonian Institution.

Persons, R. C., Surgeon. Ordered to duty in charge of the Army and Navy Hospital, Hot Springs, Ark.

Stone, E. P., Assistant Surgeon. Relieved from further treatment, and ordered to duty at the Naval Hospital, New York.

Kindleberger, David, Medical Director. Detached from the Naval Hospital, Washington, D. C., and to wait orders.

Hoehling, A. A., Medical Inspector. Ordered to the Naval Hospital, Washington, D. C.

Harmon, G. E. H., Passed Assistant Surgeon. Ordered to duty at the Naval Academy, Annapolis, Md.

A. C. Rhodes, Medical Inspector. Detached from special duty, New York, and waiting orders.

Henneberger, L. G., Passed Assistant Surgeon. Detached from Naval Hospital, New York, and ordered to special duty attending officers and families, New York.

Society Meetings for the Coming Week:

Tuesday, *May 1st:* Kansas State Medical Society (Topeka); Wisconsin State Medical Society (Milwaukee); New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Hudson (Jersey City—annual) and Mercer (annual), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Connecticut River Valley Medical Association (Bellows Falls, Vt.).

Wednesday, *May 2d:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond, N. Y. (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Essex, Mass., North District (annual—Haverhill), and Plymouth, Mass., District (annual) Medical Societies.

Thursday, *May 3d:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans, N. Y. (semi-annual—Albion); Ocean, N. J., County Medical Society (Tom's River); Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *May 4th:* Practitioners' Society of New York (private).

Saturday, *May 5th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Obituaries.

Edward Greely Loring, M. D., died suddenly, in the street, on Monday afternoon, the 23d inst., in the fiftieth year of his age. It was not known to his friends, and probably not to himself, that his health had undergone any deterioration, and on the day of his death he attended to his practice as usual. It is understood that his sudden death was owing to heart disease.

Dr. Loring took his medical degree from the Medical Department of Harvard University, in 1864. He soon came to New York, and for a time he was associated in practice with the late Dr. Agnew, whose death preceded his own by only five days. At the time of his death, and for many years before, Dr. Loring was one of the surgeons of the New York Eye and Ear Infirmary, and he had achieved distinction as an ophthalmologist. Indeed, in the field of physiological optics, and especially in that of ophthalmoscopy, his pre-eminence was everywhere acknowledged. His "Text-book of Ophthalmoscopy," the first volume of which was published in 1886, took rank at once as the standard American work on that subject. Not only was Dr. Loring's ability as an ophthalmologist generally recognized, but his qualities of heart endeared him to his patients and to all who knew him. As the shock felt on the announcement of his sudden death passes off, it will be succeeded by an abiding sense of the loss that the profession and the community have sustained.

OBITUARY NOTES.

J. Ford Prioleau, M. D., of Charleston, S. C., died, at the residence of his son in Beaufort, on Wednesday, the 11th inst., at the age of sixty-two. He was born in Charleston, received his collegiate education at the Charleston College, and was graduated from the Medical College of the State of South Carolina in 1847. In 1849 he settled in Stockton, Cal., but returned to Charleston in 1851, in which year he was appointed lecturer on diseases of women and children at the Charleston Medical Institute, from which he resigned in 1856. In 1871 he was appointed professor of obstetrics in the Medical College of the State of South Carolina, and in 1881 was made dean of the college, which position he held at the time of his death. He was a member of the American Medical Association and of the South Carolina Medical Association.

Letters to the Editor.

THE "INDEX MEDICUS."

New York, *April 17, 1888.*

To the Editor of the New York Medical Journal:

Sir: There has been much editorial complaint of late that the "Index Medicus" is not getting enough support to pay its expenses. May not the reason for this be the steady increase since it first appeared in the price of subscription? How many doctors are there who are willing to pay ten dollars a year for something which they have no very great need for personally, in order that some other man may be saved trouble?

When the "Index Medicus" was first issued there was a considerable number of those who subscribed for the journal for purely sentimental reasons. When the price reached $5, some of these dropped out; others remained because they had the publication from the start, and did not like to abandon it. When its price reached $8 and $10, and its publishers acknowledged that its survival was doubtful, many of these made up their minds that, if was "going up," they might just as well keep their money in their pockets, and favored an early demise.

What is wanted is a more popular subscription price, the incorporation of some reading matter, and the establishment in connection with the journal of a department whereby exchanges of books can be made, or rare or otherwise desirable books and journals can be bought. There are already many reading clubs, journal clubs, library associations, and similar organizations of physicians in this country, and by making such a publication a medium of exchange between them, and providing it with a certain amount of reading matter relative to medical literature, both current and ancient, it would be a paying instead of a losing scheme. F. A. Castle.

Book Notices.

Nouvelle méthode de traitement de la diphthérie. Par le Docteur G. Guelpa, Membre de la Société de médecine pratique, etc. Contribution au traitement de la diphthérie. Premières applications de la méthode de traitement de la diphthérie faites à l'hôpital Trousseau. Considérations et propositions au sujet d'un cas de diphthérie. Paris: Octave Doin, 1887. Pp. 7 to 76.

Actuated partly by the somewhat discouraging results of other methods of local medication in diphtheria, partly by a sympathetic consideration for the discomfort occasioned to infant patients by sponging the pharynx with solution of perchloride of iron, the author of this brochure has devised the more efficacious and agreeable plan of making copious injections of the same drug, in a solution of from one half to one per cent., into the pharynx and nares, with an ordinary clyster syringe, every fifteen minutes during the day and every half-hour through the night. When given by the nostril the injection must be large enough and forcible enough to return, not only through the other nostril, but also through the mouth, and if tracheotomy is required the same solution is to be propelled in the form of spray through the cannula. By these means Dr. Guelpa believes that, in addition to the dislodgment and expulsion of existing false membrane, extension of the morbid process is prevented, and the mortality of diphtheria reducible below the average of the other contagious maladies. It is rather on persistent irrigation than on any specific action of the iron that he insists, for he is willing to admit that as good, or perhaps better, results might be obtained with carbolized or borated solutions or with lime-water.

On the convenience and comfort to the patient of the persistent prosecution of a *methodus medendi* of this sort it is needless to dwell, and it would be equally superfluous to observe that the author is a firm disciple of the school which teaches the local pathogeny of diphtheria, regarding the constitutional involvement as a secondary infection. It may, however, be remarked that his practice of administering cathartoemetics, full doses of quinine, and such other therapeutic agents as may appear to be indicated by circumstances during the course of the disease, renders it somewhat difficult to determine how large a share in cases of recovery should be allotted to his "new method" of irrigation.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M. D., F. R. C. P., Assistant Professor of Clinical Medicine in University College, London, etc. American Edition, issued under the Supervision of the Author, and containing all the Material of the Two-volume English Edition, with some Additions and Revisions. With Three Hundred and Forty-one Illustrations. Philadelphia: P. Blakiston, Son, & Co, 1888. Pp. xx–25 to 1357. [Price, $6.50.]

Transactions of the Ninth Annual Meeting of the American Laryngological Association. Held in the City of New York, May 26, 27, and 28, 1887. New York: D. Appleton & Co., 1888. Pp. v–249. [Price, $3.]

Natural History of Tuberculosis in Accordance with the Germ Theory. By Noah Cressy, M. D., V. S., Ph. D. [From the "Report of the Secretary of the Connecticut Board of Agriculture," 1887.]

Annual Report of the Board of Health of the City of Indianapolis for the Year ending December 31, 1887.

Ophthalmic Surgery. By Robert Brudenell Carter, F. R. C. S., Ophthalmic Surgeon to St. George's Hospital, etc., and William Adams Frost, F. R. C. S., Assistant Ophthalmic Surgeon to St. George's Hospital, etc. Illustrated with a Chromograph and Ninety-one Engravings. Philadelphia: Lea Brothers & Co., 1888. Pp. 554.

A Method of Estimating Adduction and Abduction of the Leg in Hip Disease. By Robert W. Lovett, M. D., of Boston. [Reprinted from the "Boston Medical and Surgical Journal."]

The Legal Aspect of Suicide. Annual Address before the Medical Jurisprudence Society of Philadelphia, January 10, 1888. By the Hon. W. N. Ashman, President of the Society.

Des contractures. Contractures en général; la contracture spasmodique; les pseudo-contractures. Par le Dr. Paul Blocq, Ancien interne des hôpitaux de Paris, etc. Paris: A. Delahaye et E. Lecrosnier, 1888. Pp. 7–11 to 210. [Prix, 5 francs.]

A Practical Treatise on Diseases of the Skin, for the Use of Students and Practitioners. Second Edition, thoroughly revised and enlarged. By James Nevins Hyde, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago, etc. Philadelphia: Lea Brothers & Co., 1888. Pp. xix–17 to 676. [Price, $4.50.]

Lectures on Certain Diseases of the Jaws. Delivered at the Royal College of Surgeons of England, 1887. By Christopher Heath, F. R. C. S., Hunterian Professor of Surgery and Pathology in the College, etc. Sixty-four Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 128. [Price, $1.]

Memoranda on Poisons. By Thomas Hawkes Tanner, M. D., F. L. S. Sixth American from the last London Edition. Revised by Henry Leffman, M. D. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 177. [Price, 75 cents.]

Recent Advances in Electro-Therapeutics. Electricity in Gynæcology. By A. M. Rosebrugh, M. D., Surgeon to the Eye and Ear Dispensary. [Reprinted from the "Canadian Practitioner."]

Sixty-first Annual Report of the Directors of the General Hospital Society of Connecticut, for the Year 1887.

Chylous Ascites. By Dr. P. J. Murphy, Columbia Hospital, Washington, D. C.

Discussion on Typhoid Fever. Remarks Introductory to a Discussion on Typhoid Fever. By Alfred Ludlow Carroll, M. D. [Reprinted from the "Transactions of the New York State Medical Association."]

Pneumonia; its Mortality and Treatment. A Statistical and Rational Inquiry. By Henry Hartshorne, M. D. [Reprinted from the "Transactions of the College of Physicians of Philadelphia."]

Twenty-seventh Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati, for the Year ending December 31, 1887.

A Case of Icterus Infantum from Congenital Deficiency of the Ductus Communis Choledochus. By John Blake White, M. D. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Ueber den Zusammenhang von chronischen Verstopfungen der Nase und des Nasenrachenraums mit Unterleibsbrüchen. Von Dr. W. Freudenthal. [Separat-Abdruck aus der "Monatsschrift für Ohrenheilkunde," etc.]

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

The Bacteriological Nature of Trachoma.—Kucharsky ("Ctrlbl. für prakt. Aug.," Aug.-Sept., 1887) draws the following conclusions from a series of observations and experiments: 1. Contrary to the views of numerous clinical observers, trachoma is a disease of the conjunctiva *sui generis*, since many observers have found in the contents of the nodules or granules micro-organisms, which undergo peculiar morphological and biological differences. The pathogenesis of the micro-organism has not yet been demonstrated. 2. This micro-organism demands still more careful investigation in order finally to determine its morphological relations to diplococcus. 3. The micro-organism found by Michel in trachoma, which morphologically consists of diplococci resembling the gonococci, presents nothing characteristic. 4. The micrococcus found by the author in trachoma grows in the form of white, coalescing spots, which form a membrane running in threads. 5. Beef-peptone gelatin (5 to 8 per cent.) is always rendered fluid by it, and on its surface is found a white, very delicate membrane composed of threads. 6. The culture increases much more rapidly when the temperature is increased. 7. The cultivation of this micro-organism may under certain circumstances be alternated with *Staphylococcus pyogenes albus* and other micrococci met with in the atmosphere. 8. The author has not succeeded in producing true trachoma by inoculating doves, rabbits, cats, dogs, and man with the cultivation. 9. Inoculation of the contents of the trachoma granule upon the conjunctiva of the cat produces granules, which are analogous to the trachoma granules. 10. Trachoma and the so-called follicular catarrh (folliculosis conjunctivæ), which by some authorities are regarded as clinically very different, may bacteriologically be regarded as identical, because the same micro-organism is found in both.

Notes on Pterygium.—Lopez ("Rec. d'ophthal.," July, 1887) draws the following conclusions as to the pathogenesis and development of pterygium: 1. Repeated action of extraneous agents, such as dust, smoke, wind, heat, etc., upon the horizontal diameter of the eyeball. 2. Consecutive formation of a pinguecula, which is but the first stage of a pterygium. 3. Denudation of the epithelium over the pinguecula and neighboring portion of the cornea by the action of the same causes. 4. Implantation of micro-organisms in the loss of substance or denuded spot, and adherence of the pinguecula to the cornea. 5. Progressive growth of the pterygium by propagation of the microbes. 6. Limitation of its extension at the center of the cornea for some unknown reason. 7. Triangular shape of the pterygium by the disposition of the blood-vessels in the form of spokes of a wheel. Hence the definition of a pterygium should read: Partial hypertrophy of the ocular conjunctiva, which by the action of certain germs is implanted in and grows upon the cornea, without alteration of adjacent tissues.

An Instrument for testing Refraction and its Errors, the Strength of the Recti Muscles, and their Insufficiency. — Holden ("Arch. of Ophth.," xvi, 3) has devised an instrument for the above purpose, which consists of a thin brass disc, 0·85 mm. in diameter, rotating on a stand adjustable in height. On each side of the disc is a clip for holding lenses, each allowing 90° rotation of the lens. On one side of the disc, in addition to the clip, is a groove in which a lens of oblong shape can be slipped laterally. In the center of the disc is a perforation 9 mm. in diameter. A small sliding disc slips before and covers the large perforation. This small secondary disc has at one place a vertical slit and at another place two perforations, each 1 mm. in diameter and 4 mm. apart. The lenses are a cylinder of + 7 D. and one of — 7 D., and a prism of 6°. These are similar to the ordinary test lenses, and slip into the clips, where they may rotate 90°. In addition there is a — 10 D. cylinder cut in an oblong shape, which slides laterally in the groove on the disc. The tests are made by rotating the cylinders of 7 D. (the + cylinder in testing hypermetropia and the — cylinder in testing myopia) before the disc with the two small perforations placed horizontally, while the patient looks through them with one eye at a light 6 mm. distant. The cylinders are placed at a right angle to each other and two horizontal images are seen. When either cylinder is rotated, one image revolves about the other, and the images come into a vertical line. Then when the + cylinder is rotated, one image revolves about the other, and at that point in the rotation where the images become vertical, a pointer on the cylinder indicates on a calculated scale marked on the disc the amount of hypermetropia in diopters in the horizontal meridian. When the — cylinder is rotated and the images become vertical, the pointer on that cylinder, indicates the amount of myopia in the horizontal meridian, on a calculated scale marked on the other side of the disc. The patient is seated before a high table or shelf on which the instrument is placed, and the stand is adjusted to the height of the eye. One eye is now closed and the patient looks with the other through the two horizontal perforations at a small light six metres distant. Two horizontal images of the light are seen, and when the + cylinder is rotated, if the images become vertical before the end of the scale is reached, there is hypermetropia in the horizontal meridian, and its amount is read off the scale. If the images become vertical only when the end of the scale is reached, there is no hypermetropia in the horizontal meridian, and the — cylinder is then rotated, and when the images become vertical, the amount of myopia in the horizontal meridian is read off the scale. If the images here become vertical only when the end of the scale is reached, there is no myopia. The disc is next rotated 90°, making the perforations vertical, and the vertical meridian of the eye is tested. The images appear vertical, and when the + cylinder is rotated they become horizontal, and the amount of hypermetropia in the vertical meridian is read off the scale. If the images become horizontal only when the end of the scale is reached, there is no hypermetropia. The — cylinder is then rotated, and when the images become horizontal the myopia is read off the scale, or if the end of the scale is reached there is no myopia. If the error is of the same amount in both meridians, the case is one either of simple hypermetropia or of myopia, or possibly a case of astigmatism with the principal meridians at 45° and 135°. If the amount of error is different in the two meridians, astigmatism is present. As a large proportion of astigmatic cases have their principal meridians at 0° and 90° or a few degrees from these, cylinders of the strength we have found by the instruments are taken from the test case and put at 0° and 90° in a test frame. If now the patient reads $\frac{20}{20}$ by the Snellen types, the astigmatism is at 0° and 90° and has been determined. If the correction is not attained at once, we proceed to find the meridians of greatest and least curvature, and test them likewise. The image may be looked through from either side, and in testing hypermetropia the — side is placed next the eye, so that the operator may rotate the + cylinder readily; and when myopia is tested, the instrument is turned the other way. In testing the strength of the recti muscles, the cylinders used for refractive tests are taken out of the clips; the small disc is slipped so that the vertical slit is in the center of the instrument, and a quadrilateral cylinder of — 10 D., 12 mm. wide in the line of its axis and 36 mm. long, is placed in a groove, in which it slides laterally before the vertical slit. The axis is placed in line with the slit, and a distant light is observed with one eye looking through the slit, and the other outside of the instrument. A single light of the image is seen, and as the lens is slowly slipped outward, at some point double images appear, which run some distance apart and can not be fused again. Then on a scale on the instrument is indicated in degrees the strength of the prism which the external muscles will overcome. The lens is then slipped inward, and in the same manner the strength of the internal muscles is read off the scale when double images appear. The whole disc may be rotated 90°, and in a similar way the superior and inferior muscles may be tested. In testing for insufficiency of the recti muscles the small disc is slipped aside, leaving the large perforation in the center of the instrument, and a prism of 6° is placed upward in one of the clips. The patient, looking with one eye through the perforation, and with the other outside of the instrument, at a distant light, sees two images. If the images are exactly vertical, there is no insufficiency. If the images are oblique, the prism is rotated base inward until the images come into a vertical line, and then the degree of insufficiency is read off a scale on the disc. The ordinary line with a central dot is used in a similar test for insufficiency for near objects. Then the disc is rotated 90°, and the images will appear horizontal if the superior and inferior recti are balanced. If the images are oblique the prism is rotated until the images become horizontal, and the degree of insufficiency of the superior or inferior recti is read off the scale. If the images are fused when the prism is placed horizontally, a supplementary strong prism is slipped into the other clip, and the scale is not altered. In testing the internal recti, if the images show any tendency toward oscillation, a supplementary prism may be placed vertically in the other clip, and the images will be seen farther apart and oscillation will not occur.

One of the Causes of Stationary Amblyopia.—Imbert (" Annales d'oculistique," July–August, 1887) thinks that the symmetry and the malformations of the eyeball may be referred to one and the same physical cause—the elastic reaction of the enveloping membranes of the eye, which is brought into play by the intra-ocular tension. But while explaining the facts in this manner, the tension and curvature of the membranes should also be considered, in order to avoid mistaking cause and effect.

Amyloid Tissue in the Cornea of a Staphylomatous Eye.—Beselin (" Arch. of Ophth.," xvi, 3) describes a rare instance of amyloid deposit in the cornea. The freshly enucleated eyeball measured 37 mm. in its antero-posterior diameter and 27 mm. in its equatorial. The enlargement was chiefly due to the so-called intercalary portion of the sclera. Under the microscope the superficial layers of the cornea proper, a newly formed subepithelial stratum, and in places the corneal epithelium, were found infiltrated by peculiar, homogeneous, highly refractive, organic masses. The smaller deposits appeared as mere round dots strewed through the tissues like granules of inorganic substance; the middle-size deposits were round or oval like fat-globules; the larger formed irregular lumps. These homogeneous formations showed the typical amyloid reaction with iodine solution and iodine violet. The accumulation of the larger masses near the surface, and of the smaller ones in the deeper layers of the cornea, seems to indicate that the morbid process originated in the outer layers, and progressed toward the inner layers. The walls of the newly formed blood-vessels in the cornea were free from amyloid degeneration. The disease did not originate in the cells, but showed a degeneration of the fibers, not as a diffuse alteration of their contents, but rather as an impregnation of the tissue with amyloid substance, or as a gradual conversion of pre-existing tissue constituents.

Co-excitation in the Regions of Homonymous Visual Fields.—Schiele (*ibid.*), from observation and experiment, draws the following conclusions: 1. The so-called fatigue and the anomalous excitability of the retina must be regarded as a fatigue of the cortex of the occipital lobes. It is found (1) in all conditions heretofore erroneously designated as anæsthesia or hyperæsthesia of the retina. It may occur in purely functional affections, and in organic lesions of the central nervous system; (2) in transient psychical alterations. 2. The limitation of the periphery of a sector of the visual field has no influence on the periphery of an adjacent sector or any other part of the same visual field. 3. The fatigue of the visual center produced by the examination in one eye is transmitted in a definite manner to the fibers for the other retina that govern homonymous parts in the visual fields. 4. The limitation of homonymous retinal fields is incompatible with Wernicke's views on the projection of the visual center, according to which there is in each occipital lobe a demarkation line of the hymonymous halves of the retinæ corresponding to the vertical lines of separation of the two visual fields.

The Connection between Albuminuria and Cataract.—Evetsky (" Arch. d'ophthal.," July–August, 1887), from observations of his own upon the above subject, draws the following conclusions: 1. Age undoubtedly exerts considerable influence in the production of cataract, for the occurrence of the latter increases progressively with advancing years. In extreme old age, between eighty and ninety, cataract is much more frequently met with than is the normal lens. 2. Unfavorable conditions of nutrition seem to favor the development of cataract. 3. Both sexes are equally subject to the formation of cataract. 4. In young persons affected with renal disease cataract is not ordinarily met with. 5. In old persons affected with renal disease cataract is frequently met with, but not more so than among old persons in general. 6. Albuminuria in subjects affected with cataract has, in an enormous majority of cases, a physiological significance.

Researches on the Subject of Ocular Grafting.—Baraban and Rohmer (*ibid.*) have been experimenting with intraperitoneal grafts of the eyeball, and from these experiments and the experience of others have drawn the following conclusions: The æsthetic value of the operation of grafting an eyeball into the human orbit has proved to be practically *nil*, since the so-called success consists in nothing but the insertion into the orbit of an organ which steadily atrophies, and in which the lens becomes probably calcareous, while the cornea assumes gradually the character of a skin covered by epithelium. The larger the dimensions of the cornea the less are the chances of its preserving its integrity. The cornea rapidly becomes vascularized, and its tissue is as rapidly transformed. Its laminæ lose their homogeneous aspect, and seem to be decomposed into fibrillæ. This change begins in the vicinity of the capillaries. The skeleton framework of the cornea disappears gradually, and its place is taken by an absolutely new tissue. A certain degree of transparency may be preserved during the first few weeks after the operation, but in the end the cornea of the transplanted eye acquires the dull grayish aspect of any connective tissue.

Ophthalmoplegia Externa and Interna.—J. Hutchinson, Jr. ("Ophth. Review," August, 1887) reports a case of this kind, with autopsy. Besides almost complete paralysis of the ocular motor nerves of the right eye, the man had persistent pain in the forehead and temple, proptosis, congestion of the eyelids, and defective vision. Chronic inflammation around the right cavernous sinus had produced neuritis of all the nerves in its wall, had obliterated the venous canal, and had led to partial obstruction of the carotid artery, and adhesion of the apex of the tempero-sphenoidal lobe to the dura mater. The lesion was of syphilitic origin. The reporter related two other precisely similar cases of unilateral ophthalmoplegia externa and interna, in which syphilitic inflammation about the cavernous sinus was also the cause, and laid stress on the fact that the sixth nerve, lying farthest away from the wall of the sinus, being involved the latest and to the least extent, and also the involvement of the ophthalmic division of the fifth nerve, pointed to this view of the pathology rather than to central nuclear degeneration.

Glioma of the Retina.—Von Grolman (" Arch. für Ophthal.," xxxiii, 2) draws the following conclusions from his investigations upon the subject of glioma: 1. Vision is by no means as a rule lost as soon as the fundus reflection (*Augenleuchten*) appears, but may exist in glioma endophytum for a long time in good condition, according to the location of the tumor. 2. Glioma endophytum, in contradistinction to glioma exophytum, leads with tolerable frequency to metastases in the vitreous. 3. Retrograde metamorphosis of the neoplasm may appear not only after previous inflammatory action and perforation, but also during the early stages with a fair amount of vision, and has apparently been brought about by mercurial treatment. Still a permanent cure is never reached in this way. 4. A reappearance of the disease in the fellow-eye is to be feared even without any local return in the orbit of the eye first affected, after enucleation, even after a number of years. It has been observed after an interval of four years. The prognosis depends especially upon the age. 5. Gliomata grow luxuriantly from several layers of the retina, even from the external granule layer.

Bilateral Metastatic Ophthalmia in the Puerperal State produced by Numerous Embolic Masses of Streptococci.—Wagenmann (*ibid.*) gives the following results of his examination of a case of this nature: He found multiple emboli composed of streptococci in the retinal vessels, masses of the same streptococci in the retina and vitreous, isolated emboli in the vessels of the iris, ciliary body, and chorioid, more numerous ones in the conjunctiva, ocular muscles, and orbital tissue. There was nothing pathological in the optic nerves, but in the remains of the left internal carotid artery, after the origin of the ophthalmic artery, there was a thrombus which consisted of white blood-corpuscles and fibrin, but no cocci. The left ophthalmic artery was empty, and nothing pathological found in it. The left eye was the first attacked. The valves of the heart, the cardiac tissue itself, and the kidneys were the seat of metastases. The disease had produced complete blindness within a few hours. The examination showed the existence of a septic, embolic disease of the retina, and as its cause a multiple embolic condition of the vessels with streptococci and enormous proliferation of the microbes in the eye. The process probably began with the introduction of a soft embolus into the central retinal artery. It was not positive whether the embolus consisted solely of cocci, or whether it also contained particles of tissue as well as cocci. It probably divided and stopped a number of small arterial branches and capillaries simultaneously. This caused the first disturbance of vision. The streptococci then rapidly increased in the caliber of the vessels and extended thence into the surrounding tissue, retina, vitreous, and chorioid. The chorioid contained no emboli, and the base-membrane presented a firm obstacle to the extension of the cocci. The latter attacked the bacillar layer and pigment epithelium of the retina relatively early, for an extensive detachment of the retina subsequently appeared. The pus was the consequence of the infectious character of the cocci. In those parts of the retina which were free from cocci there was no suppuration. The pathological changes of the vitreous consisted mainly in a fibrinous saturation and marked purulent infiltration. The changes were relatively trifling compared to the enormous development of streptococci met with in the vitreous. Masses of suppuration also occurred in the ciliary body, iris, and circumscribed parts of the chorioid, due to the existence of isolated emboli.

Glaucoma after Linear Extraction of Cataract.—Stölting (*ibid.*) thinks that the pathogenesis of the glaucomatous process in these cases is as follows: By the incarceration of the lens-capsule in the cornea, and the adhesion of the stump of the iris upward, the ciliary body is drawn forward. This leads to inflammatory processes in the chorioid, to the closure to the lymph channels of exit around the venæ vorticosæ, to lymph stasis in the hyperchorioidal space, and consequently to pressure on the vitreous. If the vitreous is not fluid but rather of abnormally firm consistence, it must be drawn or pushed in the direction in which yielding is still possible—that is, where the lymph channels of exit are still open, or forward, where room may be made for the vitreous by exit of a portion of the aqueous. The vitreous therefore presses forward like a wedge into the ring formed by the ciliary body, especially its circular fibers, and pushes the latter forward until the fibers of Müller and the base of the iris are pressed laterally against the sclero-corneal margin. Hence, in these cases, the adhesions between the iris and the cornea are not the cause, but rather the result, of glaucoma.

The Causes of Erythropsia.—Dobrowolsky (*ibid.*) draws the following conclusions from his own observations and experiments: 1. The maximal dilatation of the pupil is the chief cause for the production of the appearance of erythropsia throughout the entire visual field or its greater part. In an eye with narrow pupil the same appearances may occur only when the eye looks fixedly at the sun's disc, and even here the erythropsia is limited to the point of fixation and its immediate vicinity. This difference may perhaps be explained by the assumption that in the eye with dilated pupil the light may extend over the entire retina, while in the eye with narrow pupil a sharply defined image of the sun is cast upon the retina. 2. The violet color, which appears in the visual field of the atropinized eye in all the experiments, forms a negative after-image of those rays which proceed from the sun and are dispersed over the entire fundus. Mackenzie is correct in stating that erythropsia is caused by the production of after-images. Hence it would be more correct to replace the name "erythropsia" by the expression "violet vision," which corresponds better to the facts.

The Pathogenesis of Pterygium.—Theobald ("Amer. Jour. of Ophth.," Aug., 1887) thinks that it is highly probable, in view of the intimate connection between the vascular system of the recti muscles and that of the conjunctiva in the neighborhood of the corneal margin, that these muscles, by influencing the blood-supply of the overlying conjunctiva, play an important *rôle* in determining the formation of pterygium. Assuming this to be the case, it is manifest that, of all the straight muscles, the internal recti would exert by far the most decided influence in this respect, for they are not only the largest and the most active, but they lie in closer relationship with the conjunctiva than any of the others, since their attachment to the sclerotic is nearer to the corneal margin. This would seem to give a satisfactory explanation of the fact that a pterygium occurs in so large a majority of cases on the nasal side of the cornea. In support of this view it may be stated, as a matter of observation, that persons who suffer with this affection not infrequently complain that the pterygium itself and the neighboring conjunctiva become injected when the eyes are much used in near work. What are the especial conditions which bring about this state of localized hyperæmia of the conjunctiva in some eyes and not in others we do not yet know. In some instances it is perhaps due to peculiarities in the distribution of the blood-vessels of the muscles and conjunctiva, but in a greater number it is probably dependent upon conditions which disturb the normal relationship between accommodation and convergence.

Echinococcus in the Orbital Cavity.—Zehender ("Kl. Mon. f. Aug.," Sept., 1887) reports a case of this very rare disease occurring in a man, aged thirty-eight, who presented himself with an exophthalmus of the right eye of six weeks' duration. The vision at this time was not materially affected. The retinal veins were greatly engorged. Two months later the exophthalmia had perceptibly increased. Between the upper lid and the upper orbital margin, and deep in the orbit, a soft, rounded tumor could be felt. The vision was reduced to read Jaeger No. xviii very slowly, and the ophthalmoscope showed the signs of choked disc. The patient also complained of double vision. Two months later the patient consented to an operation for the removal of the tumor. After a free division of the external canthus, the tumor could be felt distinctly, and a hook was introduced into its walls and an attempt made to draw it forward. This ruptured the wall of the cyst, and a large quantity of clear fluid poured out into the orbital tissue, and the tumor immediately receded from view and could not be discovered with the finger. The eyeball was intact, and the wound was then dressed antiseptically. There was considerable reaction, but in a few days this had entirely subsided. The exophthalmia still persisted, however, and a second operation was undertaken seven weeks later. The orbital cavity was again freely laid open, and, with the fingers and scissors, a dense membranous mass was removed from the upper and outer part of the orbit, which contained the remains of an echinococcus sac. From this time on the eyeball steadily receded into the orbit until at the end of the second week its normal position was regained. Diplopia, however, remained.

The Phenomenon of the Pupillary Shadow and its Application to the Measure of Ametropia.—Leroy ("Rev. gén. d'ophthal.," July and August, 1887) thinks that the method of determining errors of refraction by means of the pupillary shadow or keratoscopy has the following advantages: 1. It does not necessitate the relaxation of the accommodation in the observer. 2. Whatever the degree of the ametropia, the limit of possible error always remains the same and it is always known. 3. The inconvenience of the close approximation of observer and patient during examination with the upright image is avoided. 4. It may be employed for the purpose of instruction, for the errors made by the pupil may be rectified by the master much more readily than in examination by the upright image. 5. It does not require in the observer the ability to see the fundus of an eye with the ophthalmoscope.

Eserine in the Treatment of Detachment of the Retina.—Guaita ("Ann. d'oculistique," July–August, 1887) advocates the use of eserine in the treatment of detachment of the retina. He thinks that, as eserine is said to regulate the intra-ocular circulation and the filtration of the intra-ocular fluid, and also hastens the absorption and evacuation of serous and purulent intra-ocular exudation, and of inflammatory infiltration in the cornea, it would also prove efficacious in the case of serous exudation between retina and chorioid. Furthermore, he thinks there is something analogous between glaucoma and detachment of the retina, in spite of the increased tension in the one and diminished tension in the other. The eserine must be used persistently and methodically at least four times a day, and in solution of the strength of 0·50 to 0·75 per cent.

Operation for the Advancement of the Rectus with the Capsule.—Prince ("Ophthalmic Review," Sept., 1887), in devising this operation, has aimed at the three following points: 1. To secure an unyielding anterior fixation point by utilizing the dense episcleral tissue. 2. To avoid the danger of splitting the theca and consequent escape of the muscle by the formation of a loop suture perforating the capsule and conjunctiva, the cutting tendency of which should be transverse to the direction of the muscular fibers. 3. The formation of a knot, which, while avoiding the danger of vertical displacement, would secure precision in the maximum as well as the minimum degrees of deviation and insufficiency, and at the same time be subject to modification after the recovery from the anæsthesia or the paresis which attends manipulation. In high degrees of deviation, tenotomy of the opposite rectus is made for the double purpose of increasing the effect, as well as that of equalizing, on the two sides, the cicatrization, thus preventing consequent deviation. The eye being fixed, the anchor of pulley suture is introduced slightly into the dense tissue, one millimetre from the corneal margin, with a very sharp, slender, curved eye-needle. The conjunctiva and capsule of Tenon having been divided, one branch of the advancement forceps is introduced underneath the tendon of the rectus and the other closed upon it, securing the edge of the retracted conjunctiva, after which the tendon is separated from the sclera. Each end of a thread being armed with a needle, both are passed from beneath the elevated rectus, through capsule, muscle, and conjunctiva, inclosing the middle portion of the rectus in a loop from which it can not escape. The tissues in the grasp of the forceps are now divided two millimetres anterior to the loop suture, the location of which will depend on the amount of advancement required in each case. In the absence of an efficient advancement forceps, this suture may be introduced by opening the conjunctiva and capsule parallel with the margin of the rectus, elevating the muscle on a strabismus hook, and suturing it, together with the capsule and conjunctiva, before separating the tendon. One end of one suture is then crossed over the other suture, both ends of which are now brought together and securely tied, inclosing the former in a loop or pulley. Both ends of this suture are now brought together in the form of a surgical knot, and it becomes apparent that in proportion as they are tightened over the pulley formed by the second suture will the cut end of the rectus be advanced, simultaneously closing the conjunctival gap. To obtain the most perfect correction a bow-knot is applied, and time allowed for recovering from the effect of traction, which should be avoided as much as possible during the operation. Very nearly the same effect may be obtained by reversing the order of the sutures, and making the scleral attachment with the needle at one end of the second suture, in which case the pulley will be formed by the bridge of dense scleral tissue. The conception of a sliding suture, enabling the operator to regulate the effect to any desired degree, removes much of the uncertainty attending tenotomies in cases of insufficiency and diplopia. As there is no cause for exsection in cases requiring the so-called "limiting tenotomy," a curved needle is passed into and out of the tendon, subsequently dipping into the sclerotic in the reverse direction, thus forming the first and second sutures with one continuous thread. The tendon is then completely divided without anxiety from over-correction, for, if it should occur, the effect may be limited by tightening the suture when the tendon is advanced as may be required. The remaining difficulty which has been experienced in these operations is the recovery of a muscle retracted after a previous operation. To accomplish this a curved needle has been devised, which will be found useful in various operations. It has a short curve with an eye in the point, through which the thread passes after leaving a spool in the handle, on which it is wound, after being sterilized. Its size and shape permit of the introduction of its point through the tissues back of the equator of the eye.

The Transmissibility of Measles through the Medium of the Eyes.—Galezowski ("Rec. d'ophthal.," Sept., 1887) has observed the transmission of measles in many instances by means of the eyes, generally under the form of phlyctenular kerato-conjunctivitis, or subacute catarrhal conjunctivitis, persisting for a number of days, and attacking several members of the same family. When the ophthalmia has become fully developed, it becomes complicated with the ordinary phenomena of measles. When certain members of a family have previously had an attack of measles, the second attack is very apt to be localized in the eyes.

Amblyopia from Sulphide of Carbon.—Duboys de Lavigerie (*ibid.*) describes this form of amblyopia as analogous to the toxic form of amblyopia due to the abuse of alcohol and tobacco. There is, however, a difference in the condition of the visual field, as there is usually no central color-scotoma. The question naturally arises as to whether the trouble is purely functional or due to the existence of organic lesions, and this can only be answered after careful examination and comparison of a large number of cases.

Herpes of the Eye.—Durruty ("Rec. d'ophthal.," Sept. and Oct., 1887) divides herpes of the eye into (1) constitutional, (2) traumatic, (3) herpes zoster, and (4) febrile, and he devotes his paper to a consideration of the latter variety. The herpetic ocular eruption may be the sole manifestation of the febrile state which precedes or accompanies it. It is therefore idiopathic, or else a simple epiphenomenon of more important troubles of the organism. If the latter, it is symptomatic. There is a periodicity in these febrile attacks which seems characteristic of this form of eruption, and excites the suspicion of there being some miasmatic cause. Durruty draws the following conclusions: 1. Herpes, no matter what its origin, is a vesicular eruption of the skin or mucous membrane, the immediate cause of which is a neuro-paralysis of the trophic and sensitive nerves of the parts involved. 2. Ocular herpes, in particular, is the result of an anæsthesia of the trophic filaments of the trifacial, either total and resident in the ganglion of Gasser, or partial and situated on one or more peripheral branches of the fifth nerve, either ciliary, nasal, frontal, or lacrymal of the ophthalmic branch of Willis. 3. Febrile herpes with keratitis is the most frequent variety. 4. Rodent ulcer of the cornea is merely a later evolution of the febrile corneal herpes. 5. Sulphate of quinine, rigorous antisepsis, and cauterization of the cornea with either silver nitrate or Paquelin's cautery, rapidly arrest the progress of the disease, and re-establish the functions of the cornea.

Experimental Explanation of the Apparent Aseptic Properties of Particles of Lead in the Eye.—Rolland ("Rec. d'ophthal," Sept., 1887) draws the following conclusions from his experiments upon this subject: 1. Neither the shape nor the chemical composition of particles of lead suffices to explain why they so rarely produce panophthalmitis after entering the vitreous, but rather their aseptic qualities, which are due to the burning of the particles by the deflagration of the powder. 2. When the particles of lead are not aseptic at the moment of penetrating the eyeball, they produce panophthalmitis as frequently as chips of copper, iron, or brass. 3. The latter, if burned before entering the eye, are as innocuous as particles of lead.

Suppurative Irido-chorioiditis, with Adherent Leucoma of the Cornea.—Despagnet ("Rec. d'ophthal.," Sept. and Oct., 1887) draws the following conclusions from his investigations on the above subject: 1. Besides the ordinary complications of adherent leucoma, recognized by all the world, there is one which has received but little attention—suppurative irido-chorioiditis, or phlegmon of the eye. 2. This phlegmon is developed without any external cause in the eyes, and without any trace of inflammation having existed for years. 3. It is the result of a permanent traction on the ciliary region by the prolapsed portion of iris and the increase of the intra-ocular tension. The resulting cyclitis offers an admirable region for the development of microbes. 4. Every case of adherent leucoma or consecutive staphyloma should be regarded as a grave affection. In order to prevent accidents in the future, all traction upon the ciliary body should be prevented by an appropriate operation, either synechetomy or iridectomy. 5. If the phlegmon develops, immediate enucleation should be employed in preference to all other operative procedures.

Remarks on Naphthalinic Cataract.—Hess ("Rev. gén. d'ophthal.," Sept. 30, 1887) has discovered, in the course of his researches upon the alterations in the lens due to errors of nutrition, that the local changes in the pigmented retinal epithelium seem to show a phenomenon of motion in the pigment cells, due to a mechanical and perhaps a chemical cause, analogous to the movements observed by Czerny and Van Genderen Stort under the influence of light. He does not accept the theory of nutrition of the lens advanced by Panas, based on changes produced by naphthaline. The retinal changes are secondary and caused by noxious influences acting through the chorioid. In two forms of cataract so absolutely different, in one of which the cause is mechanical and in the other chemical, the primary changes are exactly the same as the changes described by Becker in physiological cataracts.

Bilateral Amaurosis following Hæmorrhage from an Operation on the Nose.—Schmidt-Rimpler ("Kl. Mon. f. Aug.," Oct., 1887) reports a case of this kind in a young woman, aged twenty-three, who became blind within a few hours after the removal of nasal polypi. Not much blood was lost at the time of the operation (about two hundred grammes), and there was no secondary hæmorrhage. Within five hours the vision began to fail, and the next morning she was totally blind. The discs and adjoining retinæ were cloudy, and the vessels were indistinct. There was no perception of light. Six days later there was little change. There was no reflex of light from the macula, and there were signs of the beginning of a choked disc. The tension was slightly increased. The pupils were dilated and immovable. The patient was very pale and emaciated. She had suffered for many years from naso-pharyngeal catarrh, and had frequently had epistaxis. She had frequently had polypi removed from the nose and pharynx. Six weeks later the right disc was distinctly atrophic, and the left disc was at the height of the "choked-disc" stage. The amaurosis remained absolute in both eyes.

Pemphigus of the Conjunctiva.—Schmidt-Rimpler (*ibid.*) reports a case occurring in a woman aged forty-three. In 1879 the patient had eczema of both forearms and hands. Several months later pemphigus vesicles appeared on the dorsal aspect of both feet and on the legs, and thence gradually extended to the trunk and head, and finally became localized on the eyelids. In October, 1885, the conjunctiva became affected, and in the summer of 1886 the patient came under Schmidt-Rimpler's care. There was a drooping of both upper lids, and in the left eye the lids were congested. The left lower lid had lost the lid margin, and there was ectropion of the mucous membrane. There was a posterior symblepharon in the left eye, and a small marginal corneal opacity. There was marked hypertrophy of the papillary region of the conjunctiva in the upper lid. On the right side there was no ectropion, but there was cicatricial tissue along the ciliary margins. There was no marked symblepharon. Hypertrophy of the papillary portion of the conjunctiva existed in the upper lid. Treatment produced but little benefit.

Death from Conjunctival Hæmorrhage.—Schmidt-Rimpler (*ibid.*) reports a case of this kind in a child, nine months old, in which the hæmorrhage occurred suddenly at first, and was followed by hæmorrhage from the nose and behind the ear. In the course of the day the upper lid became swollen. The bleeding from the nose and behind the ear came from spots covered with bluish vesicles, and was soon checked, but all efforts to check the conjunctival hæmorrhage failed. There was a small, irregular loss of substance in the tarsal conjunctiva of the left upper lid, from which the blood oozed, and it also oozed out along the entire ciliary margin. The actual cautery checked the hæmorrhage for about twenty hours, but it recommenced, and the actual cautery failed again to check it. The child died on the tenth day. There was no marked hæmophilia in the family.

An Operation for Trichiasis.—Burchardt ("Ctrlbl. f. prakt. Aug.," Oct., 1887) recommends the following operation: He makes an incision in the intermarginal portion of the lid as far as the trichiasis extends, and splits the lid to a depth of four millimetres. For the upper lid he employs Knapp's clamp-forceps; for the lower lid the horn spatula is preferable. Fine silk ligatures are then passed from the bottom of the split through to the conjunctival surface, at a distance of three or four millimetres from each other. A shallow incision is then made, parallel with the edge of the lid and three millimetres from it, but outside the region of the lashes, and this incision must be several millimetres longer than the vertical cleft between the two surfaces of the lid. A second incision, parallel with and of the same length as the first, must be made 1·5 to 2 mm. higher on the lid, and the strip of skin between the two incisions must be carefully dissected up throughout its entire length, leaving it attached at its two ends to the skin of the lid. The points of a strong pair of scissors are then introduced into one end of the interpalpebral cleft and into the corresponding end of the first horizontal incision, and the tissue included between them divided. The same thing is then done at the other end of the lid. The bridge of skin is then inserted with the aid of a strabismus hook into the interpalpebral cleft, and firmly fastened there by means of the above-mentioned sutures, the ends of which are brought out through the skin and tied. The raw surface left by the transplanted bridge of skin is then closed.

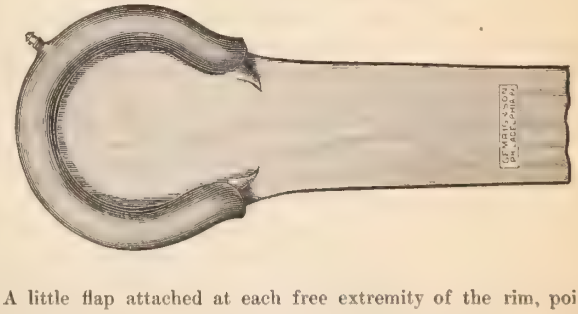
New Inventions, etc.

DESCRIPTION OF A NEW PAD FOR GENERAL SURGICAL PURPOSES.

By Howard A. Kelly, M. D.,

PHILADELPHIA.

In addition to the pads in constant use at the Kensington Hospital for Women in this city, described by me in the "American Journal of Obstetrics" (vol. xx, October, 1887)—one for perineal and cervical operations, called the perineal pad, which is rectangular in shape, and the other a larger ovariotomy pad, with a narrower inflatable rim, and a third smaller pad for use upon the office table, when douching out the vagina and uterus—I have found a fourth form of very great service in general surgical work, which I call the general surgical pad. This is made with the rim inflatable around three fourths of a circle, open on the remaining fourth, and draining, as in the others, on to an apron which conducts all fluids into the bucket on the floor. It has somewhat the shape of the ovariotomy pad, but is smaller, and has a wider opening on to the apron and a higher rim when inflated, answering better the purposes of general surgery; also well adapted for use in instrumental or even in ordinary confinements in small women in cases in which I have already used the ovariotomy pad. This general surgical pad has proved very serviceable to me on many occasions. I used it in an amputation of the arm at the shoulder when the operation was much prolonged by the great care necessary to remove large amounts of gangrenous *débris*, the sequelæ of an old suppurating bullet-wound received during the late war. The operation was conducted under continuous irrigation in a private house, and the patient returned to bed without any soil of night-dress, table, or floor, to the satisfaction of the operator and the comfort of the family. It has stood me in good stead in amputation of the forearm, and in a very difficult excision of the left half of the lower jaw for osteo-sarcoma, which had extended into the base of the skull, requiring a painfully careful dissection for its removal. The abundant use of water greatly facilitated the operation, and the satisfaction of the operator was greatly enhanced by the fact that clothing and bedding were perfectly dry after its completion. The inflated rim, in operations about the head, is of material assistance in exposing the parts, serving as a sort of crotch over which the neck is stretched and by which it is supported. The measurements are: width of pad, 19½ inches; collapsed rim, 3½ inches; top of apron, 12 inches bottom of apron, 8 inches; length of apron, 25½ inches.



A little flap attached at each free extremity of the rim, pointed toward the center of the apron, serves to direct the stream of water away from the edge toward the center down into the bucket.

In any operation about the buttocks, in using this or the perineal pad, one simple precaution should be observed; after the rim is blown up taut and the patient placed upon it, the screw should be turned, and air allowed to escape until the hand feels that the pad comfortably fits the back. The tensely inflated rim will strain the back and cause complaint. The simple sketch accompanying this fully explains the general appearance of the pad.

They are kept in stock by Mr. Gemrig, 109 South Eighth Street, and sold at four dollars and a half each.

Miscellany.

The late Dr. Cornelius R. Agnew.—At a meeting of the New York Academy of Medicine, held April 19, 1888, the following preamble and resolutions were unanimously adopted, and, as a further mark of respect to the memory of Dr. Agnew, the Academy thereupon adjourned:

The New York Academy of Medicine has been informed of the death, on Wednesday, April 18, 1888, of Dr. Cornelius Rea Agnew, who, both as an officer and a member of the Academy, has been most assiduous and successful in his efforts for its welfare.

The Academy hereby records its appreciation of his untiring zeal, of his eminent ability, of his executive capacity, and of his fidelity; of the largeness of his views for its development, of his generosity both in his gifts and in personal labor for its good.

He was alert to make the best of its methods of work as well as to improve their efficiency. He sought to develop its scientific discussions and proceedings by judicious classification of subjects; he was warmly interested in the enlargement of the library; he was exacting in attention to economy in the expenditure of its funds; he was deeply earnest in the plan for procuring a new building. In his loss the Academy has sustained a heavy blow, and the removal of his friendly and energetic personality is a great bereavement, while we shall miss his wise counsels, his discriminating judgment, his courtesy and vigor in debate, and his promptness in forwarding every scheme for the scientific and practical advantage of the Academy.

We have lost a true friend and an efficient worker. Beyond what he has done for the Academy, we are proud of his achievements in what makes the medical profession an honor and a power for good.

He founded two eye and ear hospitals and placed them on a successful basis. He aided in the organization, and was for many years one of the managers, of an asylum for the insane. He was active in many medical societies. While practicing a specialty, his outlook and concern were for the whole profession. He had no professional narrowness, and his judgments were always inclined to be charitable to those who differed with him. His services as a patriot are part of the history of our country, he was zealous for the civic weal, and a leader in movements for reform. Sanitary and social improvements were among the causes to which he earnestly devoted himself. He took an active part in helping on education, both in its popular cultivation and in its higher and technical developments.

Probity, uprightness, unselfishness, and courage were typified in him, while his character was imbued and moved by deep religious conviction.

His life is to us a glory and a stimulus.

Resolved, That we respectfully tender to his family the assurances of our deep sympathy, and, with the tribute of our affection, our high admiration for the many noble qualities which were embodied in Dr. Agnew.

The Fellows of the Academy will attend the services of his funeral.

[Signed.]
Alfred L. Loomis, M. D., }
William H. Draper, M. D., } *Committee.*
Henry D. Noyes, M. D., }
A. Jacobi, M. D., *President*,
A. M. Jacobus, M. D., *Recording Secretary.*

At a meeting of the Board of Directors of the Manhattan Eye and Ear Hospital, held on April 19, 1888, the following resolutions were adopted and ordered to be placed upon the minutes of the board:

Resolved, That the death of Cornelius Rea Agnew, M. D., the secretary of this board, a surgeon to this hospital, and one of its founders, is deplored by us as a great calamity to this charity—one that deprives us of a man possessed of remarkable medical and surgical knowledge and skill, combined with a rare kindliness of spirit and devotion to duty.

Resolved, That we mourn the loss of one distinguished in many arenas for executive ability and wisdom, which were here especially called into action in the successful establishment and maintenance of our hospital.

Resolved, That we shall ever cherish the memory of Dr. Agnew as an incentive to the performance of our duties in the care of this institution, so largely a monument to his Christian philanthropy and professional achievements.

[Signed.] John Sinclair, *President*,
D. B. St. John Roosa, *Secretary pro tem.*

At a special meeting of the junior members of the Medical Staff of the Manhattan Eye and Ear Hospital, held on Friday, April 20, 1888, the following resolutions were adopted:

Whereas, It has pleased an all-wise Providence to remove from our midst and the scene of his earthly labors our friend and colleague, Dr. Cornelius Rea Agnew,

Resolved, That each member of the junior staff of the hospital feels the sad bereavement as a personal loss.

Resolved, That it may be safely said he was to each and every member on all occasions as an elder brother, as well as a counselor and guide. His suavity of manner, his kindly and lovable disposition, endeared him to each of his colleagues, as well as to all who were fortunate enough to be brought in contact with him.

Resolved, That his was a high type of manhood, true and noble in its every expression, and brimful of the warmest and tenderest sympathies for his poor and suffering fellow-man. He was a man of prodigious industry, and always on the alert to do good to others. This hospital is an outcome of that industry, and was called into existence largely by his indomitable pluck and energy. It will remain a lasting monument to him, the last but not the least of his life-work.

Resolved, That we tender to his wife and children our deepest and most heartfelt sympathies in this time of general sorrow, expressing at the same time the hope that He who "tempers the wind to the shorn lamb" may mitigate, to some extent at least, the poignancy of their grief.

Resolved, That a copy of these resolutions be engrossed and presented to his family.

[Signed.]
{ George F. Carey, M. D.,
{ Charles G. Johnston, M. D.,
{ J. Oscroft Tansley, M. D.,
Committee.

The American Association of Genito-urinary Surgeons, which forms a part of the Congress of American Physicians and Surgeons, will hold its next meeting in Washington on Tuesday, Wednesday, and Thursday, September 18th, 19th, and 20th. The preliminary programme includes the following titles of papers: "Clinical Observations on Diseases of the Testicle," by Dr. L. B. Bangs, of New York; "Clinical Observations on Chronic Gonorrhœa" and "Two Cases of Cancer of the Seminal Vesicles, with Pathological Specimens," by Dr. J. P. Bryson, of St. Louis; "The Operative Treatment of Hypertrophy of the Prostate" and "A Case of Bowel ending in the Urethra of a Child Four Weeks Old—Relief by Operation," by Dr. A. T. Cabot, of Boston; "On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis," by Dr. George Chismore, of San Francisco; "The Connection between Masturbation and Stricture," by Dr. S. W. Gross, of Philadelphia; "Operations on the Kidney," by Dr. W. H. Hingston, of Montreal; "Syphiloma of the Vulva," by Dr. J. N. Hyde, of Chicago; "The Curability of Urethral Stricture by Electricity—an Investigation" and "The Comparative Value of Suprapubic and Perineal Drainage in Curable and Incurable Bladder Disease," by Dr. E. L. Keyes, of New York; "The *Filaria sanguinis hominis* in the United States, especially in its Relationship to Chylocele of the Tunica Vaginalis Testis," by Dr. W. M. Mastin, of Mobile; "A Case of Perineal Section for Traumatic Retention—Unusual Condition of the Bladder," by Dr. J. E. Michael, of Baltimore; "The Prophylaxis of Syphilis," by Dr. P. A. Morrow, of New York; "An Unusual Case of Urethral Calculus," by Dr. H. G. Mudd, of St. Louis; "On the Radical Cure of Stricture by Dilating Urethrotomy" and "Demonstration of a Perfected Evacuator, and an Improvement in the Method of Removal of

Débris from the Bladder," by Dr. F. N. Otis, of New York; "Pyæmia as a Direct Sequel of Gonorrhœa," by Dr. R. Park, of Buffalo; "Retrojections in Gonorrhœa," by Dr. E. R. Palmer, of Louisville; "Prostatotomy for Enlarged Prostate at the Age of Forty-two," by Dr. Abner Post, of Boston; "A Case of Removal of both Testicles for Recurrent Carcinoma" and "A Case of Nephrolithiasis complicated with Hydronephrosis in which Lumbar Nephrotomy was performed," by Dr. F. W. Rockwell, of Brooklyn; "Some Points in the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and other Instruments," and "On the Physiology of the Bladder," by Dr. A. W. Stein, of New York; "Local Treatment of Chronic Urethral Discharges," by Dr. F. R. Sturgis, of New York; "Some Points in the Ætiology of Stricture of the Urethra," by Dr. R. W. Taylor, of New York; "The Operative Treatment of Hypertrophy of the Prostate" and "Spontaneous Fracture of Stone in the Bladder," by Dr. F. S. Watson, of Boston; "The Relation of the Prostate to Chronic Urethral Discharges," "The Value of the Tolerance of the Iodides as a Diagnostic of Syphilis," and "Urethral Stricture and Enlarged Prostate in their Relation to Vesical Calculus and Calculous Pyelitis, with Cases," by Dr. J. W. White, of Philadelphia; "The Prognosis of Stricture, based on Thirty Years' Death Record of Stricture at the London Hospital and the Practice at St. Peter's Hospital," by Dr. E. Hurry Fenwick, of London, England (by invitation); and "The Congenital Anomalies of the External Urethral Orifice," by Dr. C. Kaufmann, of Zurich, Switzerland (by invitation).

American Pharmacists.—In a letter to the "Philadelphia Medical Times," for December 15, 1887, Dr. C. L. Mitchell, of Philadelphia, says:

"In regard to substitution and adulteration, it must be admitted that in numerous cases the charge is a true one, and the evil is of growing dimensions. With the reduction in the margin of profits caused by the fierce business competition of the present day comes the temptation to adulterate or substitute inferior quality. No condemnation can be too severe for the man who thus trifles with human life; and, if he can not carry on his business honestly, he had better abandon it and seek some other occupation.

"Again, the outcry is made that the physician is too apt to prescribe various remedies, more or less proprietary in character, put up by large manufacturing concerns and introduced by skilled advertising, and thus require the druggist to carry an endless variety of such articles in stock, many of which are seldom or only once called for, and thus remain a dead loss to the proprietor. But is the physician much to blame? True, he is sometimes imposed upon by the bland and suave canvasser, and the glowing printed indorsements of his professional brethren in favor of some new remedy—*vide* stenocarpine. But when he sees remedies in convenient and compact shape, of appearance much more elegant than those he can procure from the corner druggist, and of at least equal efficacy, is it to be wondered at that he should prefer X., Y., or Z.'s manufactures to the oftentimes imperfectly prepared remedies of the pharmacopœia?

"And why should the druggist complain? *As long as he keeps open store he must submit to the unalterable law of traffic—namely, the needs of the customer are to be supplied.* He will buy Lubin's extracts for Miss Jones, and Alfred Wright's for Miss Brown. Why should he not keep bromidia for Dr. A. and papine for Dr. B.? Although he makes a great outcry about being obliged to carry so much stock, he in reality does it to a very limited extent, and, outside of a few standard preparations, shifts the burden on his wholesale druggist and lets him carry the supply for him. Nearly all the large manufacturers have established depots for their goods in the principal cities, and the druggist very rarely lays in a stock outside of his actual present need unless he is sure of a steady sale. And let him remember also that if he don't keep what is called for, some once else will, and his customers will be sure to go where their needs receive best attention.

"And here let a word be said for that much abused class, the modern manufacturers of pharmaceutical specialties. The medical and pharmaceutical profession owe to them a great debt. It is their industry and their capital which have developed the perfection of the coated pill and the compressed tablet, the pancreatic ferment and the scale pepsin, the smooth and palatable cod-liver oil emulsion, and the perfected extracts of malt. To their energy do we owe the modern methods of treating disease with pre-digested and concentrated foods—a plan which has been the means of prolonging many valuable lives. They have spread the fame of American pharmacy over the entire globe, and established its supremacy against all competitors; therefore let them receive at least just recognition and honor for their labors."

A Sanitary Convention is to be held at Lewisburg, Pa., under the auspices of the State Board of Health, on Thursday and Friday, May 17th and 18th. The preliminary programme includes the following titles: "The Prevention of Contagious Ophthalmia," by Dr. P. N. K. Schwenk, of Philadelphia; "Diseased Meats and the Prevention of Trichinosis," by Dr. G. W. Fury, of Sunburg; "The Water Supply of Lewisburg," by Professor W. G. Owens, of Bucknell University; "Cremation as a Means of Disposal of the Dead," by Dr. B. F. Hyatt, of Lewisburg; "Small-pox in Country Places," by Dr. Fetterolf, of Mazeppa; "The Hygiene of the Teeth," by Dr. H. Gerhart, of Lewisburg; "Insanity among Women," by Dr. Alice Bennett, of Norristown; "Sanitary Protective Associations," by Dr. Benjamin Lee, of Philadelphia; "The Sanitary Shortcomings of Lewisburg," by Dr. W. B. Atkinson, of Philadelphia; "School Hygiene," by Dr. G. G. Groff, of Lewisburg; "Household Hygiene," by Professor Frances E. White, of Philadelphia; "How Germs Cause Disease," by Dr. V. C. Vaughan, of Ann Arbor, Mich.; and "The Drainage of Lewisburg," by Mr. S. D. Bates, of Lewisburg. The Hon. S. T. Davis, of Lancaster, will preside. Persons desiring to attend the convention at reduced railway rates should apply to the manager of transportation, Dr. William B. Atkinson, 1400 Pine Street, Philadelphia, stating what railway they will travel by.

A Remarkable Case of Heredity.—A correspondent writes that a hydrocephalic child was born to an ultra-prohibitionist father, who said to the doctor, "What is the matter with my child?" "Why, it has inherited its disease from you." "What do you mean?" "Why, it has *water on the brain.*" The father was informed that the child's prospect of recovery was about the same as that of his (the father's) succeeding in his undertaking.

The California State Medical Society.—The annual meeting was held on Wednesday, Thursday, and Friday of last week. Our information is to the effect that the proceedings were most interesting and profitable. Dr. James Simpson, of San Francisco, was elected president for the ensuing year; Dr. Walter Lindley, of Los Angeles, first vice-president; and Dr. William Watt Kerr, second vice-president.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality," for March, 1888, the whole number of deaths during the month was 488, including 11 from croup and diphtheria, 3 from cerebro-spinal meningitis, 4 from erysipelas, 6 from typhoid fever, 5 from malarial fever, 2 from measles, 2 from syphilis, 1 from septicæmia, 4 from scarlet fever, 4 from small-pox, and 1 from whooping-cough.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending April 20th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 31st corresponded to an annual rate of 21·5 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 15·1, and the highest in Preston, viz., 33·4 in a thousand. Small-pox caused 19 deaths in Sheffield, 1 in Bristol, 3 in Blackburn, 1 in Hull, 2 in Nottingham, and 1 in Manchester.

London.—One thousand six hundred and sixty-eight deaths were registered during the week, including measles, 17; scarlet fever, 40; diphtheria, 15; whooping-cough, 93; enteric fever, 13; typhus, 1; diarrhœa and dysentery, 16. Diseases of the respiratory organs caused 460 deaths, and different forms of violence, 75. Two suicides were registered. The deaths from all causes corresponded to an annual rate of 20·3 in a thousand. In greater London 2,109 deaths were registered, corresponding to an annual rate of 19·9 in a thousand of the population. In the "outer ring" 41 deaths from whooping-cough; scarlet fever, 5; diphtheria, 4; and fever, 4, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending March 31st in the sixteen principal town districts of Ireland was 33·5 in a thousand of the population. The lowest rate was recorded in Dundkalk, viz., 13·1, and the highest in Kilkenny, viz., 76·1 in a thousand. In Dublin 211 deaths were registered, including 8 from whooping-cough; measles, 3; scarlet fever, 2; diphtheria, 1; and enteric fever, 1.

Scotland.—The deaths registered in eight principal towns during the week ending March 31st corresponded to an annual rate of 23·7 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 16, and the highest in Glasgow, viz., 27·4 in a thousand. The aggregate number of deaths registered from all causes was 509, including 4 from measles; scarlet fever, 6; diphtheria, 8; whooping-cough, 17; fever, 5.

Havana.—Six deaths from yellow fever and 18 from small-pox are reported for the week ending April 7th.

Ceará, Brazil.—One hundred and twenty-seven deaths were registered during the month of February, including 4 from yellow fever.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	March 31.	2,260,945	1,122	..	...	4	....	9	4	46
Glasgow	March 31.	545,678	277	..	....	....	....	1	4	2
Warsaw	March 24.	439,174	202	..	....	4	...	....	3	6
Calcutta	March 3.	433,219	228	52	....	....	....	....	....	....
Copenhagen	March 20.	300,000	136	.	....	....	....	...	5	3
Munich	March 24.	275,000	157	..	....	....	....	....	1	4
Edinburgh	March 17.	262,733	87	.	...	....	...	....	1	....
Palermo	March 31.	250,000	94	..	..	....	....	....	3	....
Genoa	March 31.	179,397	92	..	....	4	....	....	....	2
Trinidad	March 10.	178,270	19	..	....	....	....	....	....	....
Stuttgart	March 31.	125,510	50	..	....	....	....	....	....	....
Bremen	March 24.	122,000	44	..	....	....	....	...	....	....
Havre	March 31.	112,074	81	..	....	4	....	1	....	2
Pernambuco	March 13.	110,000	92	..	1	....	1	3	....	....
Mayence	March 24.	65,701	27	..	....	...	....	....	....	1
Cadiz	March 31.	65,028	43	..	....	....	....	....	....	....
Guayaquil	March 4.	30,000	73	..	2	5	....	35	...	....
Guayaquil	March 11.	30,000	70	..	3	6	....	33	...	....
Gibraltar	March 25.	23,631	9	..	....	....	...	....	....	1
Kingston, Can	April 13.	16,216	9	..	....	....	....	....	....	....
Cape Haytien	March 31.	15,000	6	..	....	....	....	....	....	....
Cartagena, Cola.	March 31.	13,000	8	..	..	....	....	....	....	....
Matamoras	April 7.	12,000	8	..	.. .	....	....	....	....	....
Turk's Island	March 29.	5,000	4	..	....	....	....	....	....	....

UNITED STATES.

Charleston, S. C.—A telegram received under date of the 18th instant, relative to the schooner Lillie F. Schmidt, stated that "the small-pox-infected schooner Lillie F. Schmidt did not go to Sapelo, as ordered, but is reported to have sailed for Baltimore." The health officer at Baltimore was immediately notified by telephone from this bureau.

Connecticut.—One thousand one hundred and seventy deaths were registered in 153 cities and towns in Connecticut, having an aggregate population of 701,937, during the month of March, 1888, corresponding to an annual rate of 20 in a thousand. The deaths include measles, 4; scarlet fever, 16; cerebro-spinal fever, 16; diphtheria and croup, 39; whooping-cough, 7; and enteric fever, 11.

California.—One thousand and sixty-six deaths were registered in 87 cities and towns in California, having an aggregate population of 734,750, during the month of March, 1888, corresponding to an annual rate of 17·4 in a thousand. The 1,066 deaths included small-pox, 15; diphtheria, 28; scarlet fever, 10; measles, 24; whooping-cough, 3; and enteric fever, 18.

Philadelphia, Pa.—Small-pox.—Sixty cases and four deaths were reported up to April 18th.

New York, N. Y.—Small-pox.—Seventy-nine cases were reported in New York on the 19th instant.

Brooklyn, N. Y.—Small-pox.—An official report, dated April 20th, states that there are 38 cases in the county hospital that were removed from the city. Three cases quarantined in city. Six deaths at hospital last week and 1 death in the city.

Jersey City, N. J.—No cases of small-pox have been reported since March 30th. The record up to that time was 38 cases and 2 deaths.

Florida.—A late inspection at Micanopy, Plant City, and Bartow, has proved the recent existence of yellow fever there, and that several other points in the southern and western portion of the State are to be looked upon as suspicious.

NOTICE.—All State and local boards of health are respectfully requested to exchange reports regularly.

ANSWERS TO CORRESPONDENTS.

No. 177.—Immediately on the receipt of your letter we wrote to the author of the article, asking for the information you desired. He has not favored us with a reply. From the article itself, however, it is evident that he means the dry crystals, and not a solution. Of course, the application calls for much carefulness.

No. 178.—Dr. Daniel Lewis, No. 62 Park Avenue, New York.

No. 179.—It varies from half a teaspoonful to a teaspoonful and a half.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, May 5, 1888.

Lectures and Addresses.

THE SIGNIFICANCE OF THE EPIBLASTIC ORIGIN OF THE CENTRAL NERVOUS SYSTEM.

PRESIDENTIAL ADDRESS DELIVERED AT THE ANNUAL MEETING OF THE NEW YORK NEUROLOGICAL SOCIETY, May 1, 1888.

By GEORGE W. JACOBY, M. D.

[After a few remarks pertinent to his entrance upon the duties of his office, the speaker proceeded as follows.]

When, after impregnation, the remarkable process of segmentation takes place in the germ, the result is the formation of a number of so-called embryonal or indifferent corpuscles, from which the entire protoplasm of the future animal is the direct descendant, but which lack any definite character as regards the formation of future tissue. By the word segmentation is, of course, not meant a breaking up of the protoplasm of the germ into isolated individuals, but it is to be understood that the corpuscles are interconnected during every stage of segmentation, either by the intervening layers of cement-substance, or by means of delicate offshoots or bridges. This continuity is a fact which is considered established by almost all modern biologists, whether engaged in the study of animal or in that of vegetable life. The next stage after the completion of segmentation is the division of the germinal spot into layers. This phenomenon has been best studied in the fructified germ of the chick. We know positively that, as a result of fructification, we have the division of the germ into two layers, inclosing a small vacuole or cavity, which two layers are speedily increased by the appearance of a third, between the two original ones. These three layers are of supreme importance in the development of the embryo, and their history is one of the most important points in comparative embryology.

These layers have been termed by Remak[*] the ectoderm, close beneath the vitelline membrane, and the entoderm, forming the bottom of the vacuole toward the yolk, whereas to the middle layer filling the vacuole he applied the term mesoderm. Balfour was the first to make any change in this nomenclature, suggesting the terms epiblast for ectoderm, hypoblast for entoderm, and mesoblast for mesoderm, and these terms have been adopted by all English and by a great many German writers on account of their manifest superiority. Ever since the attention of embryological observers has been turned from the mere recognition of changes to the question of their *provenance*, the first stumbling-block has proved to be the origin of the mesoblast.

A large number of investigators maintain that the mesoblast is an offspring of the epiblast; a smaller number, among whom is Balfour[†] himself, maintain that to the hypoblast alone is due the origin of the mesoblast, and still a third group exists, who, taking the golden path, are willing to allow both the hypoblast as well as the epiblast to participate in this formation. To the view of Peremeschko,[*] that the elements of the mesoblast creep or fall through the fenestrated hypoblast from the subjacent white yolk into the space between the original layers, little or no importance can be attached.

A number of modern writers seem to agree that the mesoblast grows from the periphery, *i. e.*, from the germinal wall and the area vasculosa, into the space between these two layers in the primitive streak.

Von Baer,[†] and afterward Remak, were the earliest to make an attempt at proving a direct relationship between these layers and the tissues derived from them. Remak proved that the epiblast generated the epithelium of the skin and its appendages, such as the hairs and the sudoriparous and sebaceous glands, the crystalline lens, and the central nervous system; that the hypoblast formed the epithelia of the alimentary canal and its glands; and that the mesoblast gave rise to the vascularized connective tissue and muscles. This theory of exclusiveness was received with great enthusiasm, since no preceding publication had shed so much light upon the functions of the germinal layers and their relation to the parts of the complete organism. But in its turn this special significance has been considerably shaken. A. Kölliker,[‡] for instance, comes to the conclusion that it is only the hypoblast that is exclusive in the production of epithelia, whereas the epiblast and the mesoblast are governed in the formation of tissues only by their location in the germ, and do not possess any inherent qualities in this respect. He says: "In consequence of these considerations, the conviction is irresistibly forced upon us that the significance of the germinal layers is not a histologico-physiological one, but a morphological one. If we start from the premise that originally all embryonal cells as they arise from segmentation are of equal value, then the thesis may be sustained that all three layers, *potentia*, also possess the capability of transformation into all tissues, but, on account of certain morphological conformations, do not manifest this power everywhere. All observers, without exception, admit the fact, shown first by von Baer for the vertebrates and by Kowalewsky for a large number of the invertebrates, that the central nervous system is an offspring of the epiblast, which by all is considered epithelial in nature, and which, beyond a doubt, also produces the epidermis of the skin, its appendages, etc. Only in the batrachians has Stricker seen a separate layer beneath the epiblast, from which he maintains the central nervous system is derived.

The question now forces itself upon us, Can we explain the philosophy of the remarkable fact that the surface layer of the body also furnishes the organs of perception and intelligence? The answer, it seems to me, must, notwithstanding different views of other writers, be given affirmatively.

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[*] "Untersuchungen über die Entwickelung der Wirbelthiere," 1850–'55.

[†] Foster and Balfour, "Elements of Embryology," London, 1883.

[*] Peremeschko, "Ueber die Bildung der Keimblätter im Hühnereier," "Wiener Sitzungsbericht.," vol. lvii, 1868, p. 499.

[†] Von Baer, "Entwickelungsgeschichte der Thiere," "Beobachtungen und Reflexionen," Part i, 1828; Part ii, 1837.

[‡] A. Kölliker, "Entwickelungsgeschichte des Menschen und der höheren Thiere," Leipsic, 1876, vol. i.

The lowest forms of animal life, such as the infusion animalcules, including the amœbæ, lack nerves and nervous system; nevertheless, they are unquestionably endowed with the capacity of sensation. In an infusion they are always found gathered at that portion which is best supplied with light, and this is the case even in a single drop of fluid. So also will they evade obstacles in their path and react upon the eddy produced in the liquid by an approaching rotifer. Or let us follow Ferdinand Cohn,* and scoop into a glass vessel some of the green scum from the surface of the water of a ditch. We shall find in this water innumerable *Euglenæ*, microscopical green, spindle-shaped particles of protoplasm, belonging to the class of *Flagellata*, which have not yet been allotted positively to the animal or to the vegetable kingdom. After a brief period these *Euglenæ* agglomerate at the side of the glass which is turned toward the window. Toward evening they gather upon the surface of the water and crowd together in the shape of green balls. Among the *Euglenæ*, however, are found parasites in the form of spores of *Chrytridium*, which separate from the green balls, and are detected as colorless bubbles. Hereupon a number of offshoots grow out from the periphery of each bubble, and each one is prolonged until it it has reached a *Euglena*. The offshoot is then forced into the latter and its interior sucked out. Now I am sure that you will all agree with me if I maintain that these movements of these organisms are due to sensation, be it mechanical or perception of light, and that this sensation is localized in the outermost cover of the animalcule, which cover itself is a layer of living matter, obviously most exposed to the influences of the outer world. It is, therefore, the living matter itself which is endowed with the property of sensation, and which, upon receiving an impulse from without, communicates this impulse to the rest of the organism, whereupon a reflex action, motion, ensues. If now the outermost layer of an animal becomes more resistant by being cornified or calcified, it serves as a protective layer, but at the same time becomes less serviceable for the perception of impressions from without, and when this has occurred we easily appreciate the necessity for a more precise localization, which assumes the character of the sense of touch. This sense, according to Lovett,† was, as early as the fifth century, B. C., declared by Democritus to be the primary sense, and the senses of sight, hearing, and taste were assumed to be differentiations from it.

This localization, then, will take place in the shape of a delicate offshoot, a cilium or flagellum, protruding from the surface of the body, and also penetrating to a certain depth where it is in direct connection with the active living matter —living matter which is certainly more active than that of the surface generally.

Conn and Beyer,* speaking of the organs of special sense of *Porpita*, describe "ectodermal pockets" filled with "modified ectodermal cells," and they say "from their histological appearance they would seem to be organs of touch. The presence of such long delicate cells, with free ends exposed to the surrounding water, would certainly point to such a function; and their position at the extreme end of the velum would favor the same view. They have no connection with the nerve ganglia above described; not a single nerve cell is to be found in them or in any way connected with them."

These reflections also hold good for the comprehension of localization of sensory impressions, more especially for that of vision.

Here the external layer is depressed in the shape of a pocket or cup, thus producing the earliest known visual organs of low animals, in which this spot is marked, very often at any rate, by an accumulation of coloring matter, and in the majority of these low divisions retains its primitive connection with the epiblast even in the stage of complete development. We furthermore find that the number, as well as the localization in different parts of the body, of such visual organs in low organisms varies considerably. This latter fact certainly goes far to prove the differentiation of these organs from an indifferent basis, and this view is only strengthened by the examination of certain species of worms. In many of the latter species (*Turbelaria*, *Trematoda*, *Nemertina*) we find † "at that place in which, in those of a higher class, there are well-developed eyes, nothing but pigment spots, symmetrically arranged and situated near the brain." Speaking of the *Annulata*, referring particularly to the *Hirudinea*, Gegenbaur says: "Their organs of vision correspond so remarkably in their construction with those cup-like formations described as organs of touch that a condition seems to be given here in which a specific organ of sense is developed from an indifferent organ of perception formed in the integument."

Obviously a depression of the surface layer is more protected than the surface itself, and may thus remain in a more sensitive or percipient condition than the rest of the surface. These depressions, which lower in the scale were simply pigment spots, in the somewhat higher organisms are found to have a species of lens at the entrance of the pigmented pocket. Strange to say, Gegenbaur is very loath to admit that a pigment spot alone, without any traceable nerve connection, is worthy of being considered as a visual organ, although in other parts of his book, as shown by the citations above given, he virtually acknowledges that such is the case. Similar facts have been established as regards the organ of hearing, which in low forms of animal life is nothing more than a depression of the external layer in the shape of a cup, whose lining is intensified in its perceptibility for waves of sound—that is to say, is supplied with more living matter than the rest of the surface. Here also all special connection between these organs (in low forms of worms) and the central nervous system has been sought for in vain, thus again demonstrating the formation of an organ of special sense from an indifferent perception organ.

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* Professor Ferdinand Cohn, "Lebensfragen," "Wiener med. Presse," 1886, p. 1431.

† R. W. Lovett, "The Development of the Senses," "Popular Science Monthly," 1882, p. 34.

* H. W. Conn and H. G. Beyer, "The Nervous System of Porpita." Studies from Biological Laboratory, Baltimore.

† C. Gegenbaur, "Grundriss der vergleichender Anatomie," Leipsic, 1876, pp. 163–164.

Here it is not amiss to cite the words of Heitzmann and Bödecker,* who have expressed these facts as follows: "From an organogenetic point of view we may say that the outer senses of the animal organism, serving for perceptions from the outer world, are formations of the outer investment of the animal, its epiblast. The brain, being the highest perfection of sensual impression, retains its origin from the epiblast. The same may be said of the teeth, which, in some lower order of amphibious organisms, such as *Chelonia*, are nothing but horny ledges, or a thickening of the epithelium. Even at the height of development they retain their genesis from the epiblast, and are, at least as far as the enamel is concerned, derivations from it."

The sensory perceptions, then, being special localizations of sensation and perception in general, are the earliest to appear both ontogenetically and phylogenetically, to make use of the terms of Ernst Haeckel.† Even in the supremely developed organism of man all knowledge of the outer world passes into the body first by means of sensory perception. This is popularly acknowledged, as expressed in the much-cited quotation: "The burnt child dreads the fire." Who has not, in observing the restlessness of the infant, thought that every turn of the head at a noise, every gaze at surrounding objects, the fingering and sucking of all things within its reach, all represented the process of development by means of the senses? To make use of Herbert Spencer's words, "they are the first steps in the series which ends in the discovery of unseen planets, the invention of calculating engines, the production of great paintings, or the composition of symphonies and operas." Based upon such personal experience ensues the reasoning, the intelligence. According to this conception, the system serving for sensory perception will be a depression of the outer layer of the body, which in all higher animals is the epiblast made up of epithelia; and, the nervous system being derived from the epiblast, it is implied that the functions of the nervous system were originally taken by the entire skin, and then became gradually concentrated in a special part of the skin, which was finally removed from the surface and became an organ *per se*. In accordance with this, we see in all higher animals the first trace of the future central nervous system as a furrow, along the dorsal aspect of the germ, which is bordered by a slight elevation of the epiblast. The furrow deepens, remaining for a time in continuity with the epiblast, until finally the furrow becomes closed into a tube, having a central caliber and being lined by a single layer of epithelia, severed from the outer epiblast layer of epithelia, and covered with the epithelia of the epiblast, now no longer in connection with the tube. Thus far the development of the central nervous system is identical with the development of the crystalline lens of the eye.

How widely different, however, is the course taken by the epithelia in these two organs! Whereas the epithelia of the crystalline lens become elongated, mainly in the ventral portion of the tube, and remain epithelia throughout life, the epithelia building up the so-called medullary tube, the future spinal cord, rapidly undergo a change in their morphological appearance, beginning with the second day of incubation (chick embryo), and assume the character of medullary or indifferent tissue. Here, therefore, that portion of indifferent tissue which has served for the formation of the epiblast, particularly that part of the epiblast from which the nerve-tube has been produced, has once more retrogressed into the original indifferent form, and has given rise to a tissue which has no title whatever to be termed epithelial—namely, nerve-tissue. A close study of the history of development plainly demonstrates that such oscillations, such a rise and fall, are very frequent in the formation, more especially in the transformation, of tissues. Such fluctuations are best observed in the development of bone-tissue. The medullary tissue produces cartilage in the notochord, from which we know the bodies of the vertebræ are subsequently produced; but cartilage never produces bone-tissue directly; it first returns to its medullary or indifferent condition, and then, and only then, produces bone-tissue. These same oscillations are common occurrences in the growth of any tissue where the increase in bulk does not take place directly, but by the intermediary stage of medullary corpuscles. I therefore again reiterate that nerve-tissue has no title whatever to the appellation "epithelial" except in the very earliest stages of its formation. This reiteration is all the more necessary because it has been attempted to carry the theory of the exclusiveness of the three germinal layers so far as to call even nerve-tissue, because it is formed from the epiblast, epithelial in nature. No less an authority than Balfour* himself has made such a capricious statement. He maintains that the so-called ganglion cells have been evolved from simple epithelial cells of the epidermis, and that their offshoots, the axis-cylinders, may be considered as offshoots of epithelia.

He also speaks of "epithelial cells" in the act of becoming "nerve cells," and, furthermore, maintains that the spinal nerves are outgrowths from the central nervous system, and grow thence through the mesoblast to the periphery of the body. These views are all the more surprising since Balfour, as already stated, allows that the mesoblast originates from the hypoblast, thus admitting that connective tissue and muscle may arise from purely epithelial tissue; but because the nervous system arises from the epiblast he says that this nervous system must be epithelial, which, to be logical, he ought also to allege for connective tissue and muscle.

Mihalkovics,† in a few specimens, saw some epithelial-like formations lying at the bottom of the furrow formed in the epiblast, and from this he assumes the formation of the epithelia of the central canal. Such formations were absent in all the specimens that I have studied, and certainly at the fifth day of the chick embryo there is no trace of a lining epithelium around the central canal. In fact, all these views become untenable in view of the facts which the study of embryology reveals.

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* Carl Heitzmann and C. F. W. Bödecker, "History and Development of the Teeth," "Independent Practitioner," 1887, p. 455.

† E. Haeckel, "Generelle Morphologie," 1866.

* Balfour, F. M., "An Address," "Nature," London, September, 1880, p. 417.

† Mihalkovics, V. von, "Entwickelungsgeschichte des Gehirns," Leipsic, 1877, p. 12.

On the fifth day after incubation (chick) we unmistakably see the tissue which is sharply defined as the future spinal cord to be composed of a mass of protoplasm, with faint indications of agglomerations into medullary corpuscles; even the nerves, more especially the vagus, which is the earliest discernible, is not a nerve proper, but a tract of medullary corpuscles. Only very much later do ganglionic elements appear at all. We know, for instance, that in the human embryo no motor ganglia are present in the spinal cord prior to the third month of embryonal life, and that even in the new-born the number of ganglionic elements in the gray substance is very small, so that the great majority are obviously formed after birth. It is, therefore, astonishing that the fact has been overlooked that between the original epithelia and the late ganglionic corpuscles there has existed a retrograde stage of absolute indifference. We can not compare ganglionic corpuscles with epithelia, knowing, as we do, that each ganglionic element is made up of a certain number of medullary corpuscles. We know, also, from the history of development, that the gray substance of the central nervous system appears first in the form of indifferent protoplasm, in which thread-like tracts make their appearance, the future axis-cylinders, long before any medullated nerve is visible. Can we consider the white substance an epithelial one, since we know that it is freely mixed with connective tissue, the neuroglia, and its blood-vessels? How is it possible to understand the presence of so great a number of blood-vessels, which are of mesoblastic origin, throughout the gray substance, if the latter is epithelial in nature? The theory presupposing an immigration of mesoblastic elements into the gray substance is an entirely gratuitous one, since we observe in other parts than the nervous system the new formation of blood-vessels independently of other blood-vessels and in no connection whatever with blood and its vessels. Bearing upon these questions are the interesting observations of Heitzmann and Bödecker,* showing the formation of nerves in peripheral portions of the body (in the pulps of teeth) entirely independently of all previously formed central nerves.

I can see no escape from this dilemma unless we assume that that portion of the epiblast which serves for the production of the nervous system has entirely lost its epithelial nature and has returned into the stage of indifference in which it is impossible to decide whether a tissue is epithelial, therefore epiblastic, or connective tissue, that is, mesoblastic. I look upon the gray matter of the central nervous system as such an indifferent substance—namely, pure protoplasm—and I am convinced that all endeavors of histologists to establish a differentiation between purely connective tissue and purely nervous tissue in this gray matter are useless and will remain ineffectual.

The phylogenetic order of development of the sensory organs of the higher animals is not identical with that of the lower ones. In the latter the depression of the epiblast which serves for a special sensory function is the primary, whereas in the former the depression of the epiblast for the central nervous system is first formed, while the retina, the labyrinth, etc., are secondary formations. Nevertheless, the epiblast participates primarily in the formation of the lens and of the auditory canal.

The cerebrum, being the seat of association and intelligence, is entirely a secondary formation, arriving at its full development in direct dependence of the knowledge gained through sensual impressions, this being the case not only in the higher classes of animals, but also in single individuals. In my conviction, the history of the development of the central nervous system is intelligible only upon the following grounds: (1) That its earliest stage is a depression of the epiblast, in concordance with depressions of the surface layer of lower organisms, for sensory perceptions; (2) that the central nervous system, being an offspring of the epiblast, is epithelial in its origin and so remains *only for the earliest periods of embryological development;* and (3) that the original epithelium returns to a stage of morphological indifference in which it remains during life, composing the gray substance of the central nervous system.

Original Communications.

TREATMENT OF PENETRATING GUNSHOT WOUNDS OF THE CRANIUM.*

By JOSEPH D. BRYANT, M.D.

It is not my intention to fatigue you with either a long or a critical consideration of the generally accepted steps of treatment of penetrating gunshot wounds of the cranium. I do not desire to disturb in the least the well-established measures that are found along the paths of surgical inquiry, which have served as satisfactory guides both to the inexperienced and the experienced alike, on all occasions. It should be the purpose of each one who acts on principle, rather than on impulse or from policy, to do his share in so directing the lines of thoughtful consideration and conclusion in respect to professional methods that the profession of which he is a member may not be exposed to satirical expressions not unlike the one used by Young, who said in his epistle to Pope: "*And* oftener changed their principles than *shirt.*" It is the purpose of this paper to add somewhat to the accepted method of the treatment of these forms of injury, or, at least, it is hoped that its presentation and discussion may inspire a fuller confidence in the modern deviations of treatment—deviations that are recognized as the legitimate issue of antiseptic cleanliness and inventive genius. This paper will be devoted almost entirely to the consideration of the indications for treatment of the injuries which give to the paper its title. This course is thought to be an eminently proper one, since the indications for the treatment of a condition bear the same important relations to the treatment itself as exist between the compass point and the trusted pilot at the wheel. The indications for treatment are divided properly into constitutional and local. The local indications only will engage our attention at this time, together with the consideration of the deviations in the fulfillment of them that appear to be warranted by the recent advance in surgical technic. The commonly accepted local indications for treatment of these injuries may be enumerated as follows:

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* Carl Heitzmann and C. F. W. Bödecker, "Contributions to the History of the Development of the Teeth," "Independent Practitioner," p. 1, 1888.

* Read before the Medical Society of the State of New York at its eighty-second annual meeting.

1. The arrest of hæmorrhage.
2. The elevation of depressed fragments of bone.
3. The removal of foreign bodies from the wound.
4. The establishment of good drainage.
5. The combating of inflammation.

The means to be adopted for the arrest of hæmorrhage will depend on the source from which it comes. If it comes from the scalp, the common means employed for the arrest of hæmorrhage in other situations will be found to be ample in this instance. If the flow of blood comes from the bone itself, I am accustomed to plug the bleeding-point with catgut. The shape and size of the catgut plug are made to correspond to the requirements of the case. The employment of this agent in the manner indicated possesses this virtue: the plug can be permitted to remain in position without the least concern, since it will become absorbed after having performed its obstructive function, and in no instance need fear be had of any septic influence by reason of its presence.

Hæmorrhage from Meningeal Vessels.—Hæmorrhage from the vessels of the pia mater can be controlled usually by simple pressure alone. The vessels associated with the dura mater, however, bleed with a much greater degree of persistence. The middle meningeal artery, for instance, and also its branches, not infrequently cause much hæmorrhage, and not a little difficulty is experienced in arresting the bleeding. If the bleeding-point can be caught as it makes its appearance near the border of the fractured bone, the hæmorrhage is easily controlled by ligature. In my observation of this class of cases, the open end of the bleeding vessel is drawn so far beneath the border of the fractured bone that it can not be seized with a forceps directly. In this emergency I have employed the following plans for the arrest of hæmorrhage:

1. Plugging the bleeding-point with catgut. This is insecure and should not be employed if the hæmorrhage is persistent.

2. Clamping the bleeding vessel against the inner surface of the bone beneath which it runs. This plan can be carried into effect easily by aid of the Langenbeck clamp, or of any other that will meet the indication. The blade of the clamp may be applied directly to the lower surface of the vessel, or an antiseptic compress may be interposed between the blade and the vessel.

3. Cutting away the portion of bone that obscures the bleeding-point with a rongeur and catching and tying the point directly. The latter is the surer, consequently the better plan.

Hæmorrhage from a Sinus.—This form of hæmorrhage is often troublesome, but need not excite much apprehension if the blood does not collect in the cranium in an amount sufficient to cause cerebral compression. The blood should be permitted to escape or be removed, and further accumulation of it be obviated by directly closing the bleeding-point of the sinus. The closure can be accomplished easily by the direct application of an antiseptic compress to the wound of the vessel, if the wound is accessible. If the bleeding-point is inaccessible through the brain-wound and the hæmorrhage is persistent or dangerous and not controllable by other means, then the seat of the wound of the sinus should be located with the probe, as in the case of a ball, and it should then be approached from without by aid of the trephine when practicable. If a rent is present in the sinus, its border can be united with fine catgut. The application of a simple compress to the wound of a sinus, however, is usually sufficient to meet the indications. If the hæmorrhage arises from injury of a sinus of the base of the brain, especially the petrosal, the application of direct pressure on the bleeding-point can not be so well accomplished. In this instance a fatal flow of blood may be prevented by closing the external wound, even at the risk of causing compression of the brain by accumulation of blood in the wound. Problems of this character are not presented often for solution, since the missile that wounds a sinus in this situation causes almost immediately fatal injuries of the brain-substance at the same time. It is not impossible in sinus wounds to pass by means of a probe a small tampon of an antiseptic astringent substance connected with a long thread through a straight channel to the point of hæmorrhage. This tampon should be of proper size to admit of its easy passage along the track made by the ball. When it has been properly applied against the bleeding-point the probe can be withdrawn and the tampon permitted to remain in position. The thread connected with it is allowed to hang from the wound, and is for the purpose of withdrawing the tampon when necessary. This plan has been employed successfully by Dr. Girdner on several occasions for the purpose of checking hæmorrhage from the brain-substance. In many of these cases, however, death from compression by blood, or from injury of important nervous centers, ensues too quickly to permit the services of a surgeon to be of avail, even though they are exercised without delay.

Hæmorrhage from the Brain.—If considerable blood escapes from a wound of the brain, it is probable that the vascular structures in or about the ventricles are lacerated; to use a practical expression, "The ball has gone through the ventricles." Severe hæmorrhage from a wound of the brain may be caused by the wounding of a sinus, or of an intracerebral vessel of considerable size. Fortunately, hæmorrhage from a wound of the brain-substance only need cause no apprehension. Moderate, gentle pressure over the external opening, or tamponing the track of the ball, and elevation of the head when permissible, are sufficient to control it. The dusky color of the blood, the direction of the wound of the brain-substance, and the persistency of the flow will indicate whether or not a sinus has been injured. As to the direction of the wound: It should not be forgotten that the impingement of a ball on a prolongation of the dura mater, while passing, may cause such a deflection of the ball as to render its course after this time entirely a matter of conjecture. The manipulations to be made along the track of a missile for the purpose of locating or removing it, or for the purpose of making a counter-opening through the skull, should not be attempted until the danger from hæmorrhage has disappeared. The passage of a ball into or through normal brain-structure at other situations than those already mentioned is not attended with hæmorrhage of a dangerous nature, consequently any steps thought to be necessary as a means of treatment for the removal of a ball in the latter instance need not be delayed for this reason alone.

Elevation of Depressed Fragments.—The importance of this indication and the means of meeting it are so well understood already that it is superfluous to take the time for its consideration.

Removal of Foreign Bodies.—This indication is a most important one, and it is in its fulfillment that the principal deviations from the previously accepted course of treatment will be noticed. The foreign bodies requiring removal from the brain are (1) fragments of bone, hair, textile fabrics, etc.; (2) the missile itself. Such of these agents as may be located around the open mouth of the wound, or have entered an inch or two within the brain, have been removed frequently and with complete success. However, the manipulation employed to remove a ball from the brain, even if it has entered that structure but a short distance, has been deemed a sufficient deviation from the proper course of treatment, at a recent date, to be presented in a court of justice as contributive to the death of the patient. It is not now worth the while to enter into the consideration of the exact distance the surgeon may explore the brain for the purpose of locating and removing a ball, since the object of this paper will be to commend the removal from the brain of such bodies at once, in nearly all instances, when their exact location can be determined. Let us pass now to the consideration of the questions:

1. Should a ball be removed from the brain? 2. If so, how should it be done? To determine a general rule of action regarding the first question, it is only necessary to inquire whether or not a greater number of patients have recovered after removal of balls from the brain, or after the missiles had been permitted to remain within it. It must be presûmed, of course, that all other things were equal in the two classes of cases.

Dr. R. H. Wharton, of Philadelphia, published in the "Philadelphia Medical Times" of July 19, 1879, a concise tabulated satement of the results of "an analysis of 316 cases in which foreign bodies were lodged in the brain." It is thought by the writer of the present paper that this number is entirely sufficient for the purpose of establishing the conclusions that will be drawn from them—conclusions which must be recognized as having little or no practical reference to antiseptic methods. An analysis of these cases shows that 236 of the entire number of missiles were "balls," "portions of balls," and "buck-shot." Of this number the missiles were removed from the brain in 66 instances, and in 170 instances they were permitted to remain. Of the 66 cases in which removal was resorted to, 27 of the patients (40 per cent.) died and 39 (59 per cent.) recovered. Of the 170 cases in which the missiles were not removed, 97 of the patients (57 per cent.) died and 73 (43 per cent.) recovered. It is now easy to be seen that the death-rate is 17 per cent. greater when the missiles are allowed to remain unremoved.

In order to determine the relative rates of death and recovery after gunshot wounds of the different lobes of the brain, with and without removal of the missile, a series of 140 cases were collated at my request by Dr. Glover C. Arnold upon which to base the calculations. The great majority of these cases were taken from the history of the late civil war. It is proper to state that all possible caution was enjoined on Dr. Arnold in the selection and study of the cases. With but few exceptions, they were taken consecutively as placed on record by the different authors. The point of entrance and the track of each missile, together with the situation and final lodgment or exit of it, were carefully determined by comparing the statements of the records of each case with the topography of the normal brain as set forth in the works of accepted authorities of the topography of this organ. Of the 140 cases, 60 implicated the frontal lobes alone, and one half of the patients died. Of the 60 cases, in 3 only did the missile pass directly through and out of the cranium, and 1 of the patients died and 2 recoverd. Of the remaining 57 cases, in 30 the missiles were removed; 16 patients died and 14 recovered. The missiles of the remaining 27 were not removed; of these, 13 died and 14 recovered. The parietal lobes were involved alone in 11 of the 140 cases, and 5 patients died. In 6 of the 11 cases the missiles were removed; 1 died and 5 recovered. Of the 5 remaining patients, 4 died and 1 recovered. Of the 140 cases, the temporo-sphenoidal lobes were penetrated in 24 instances, and 9 patients died and 15 recovered. The missiles were removed in 7 of the 24 cases; 2 of the patients died and 5 recovered. In 8 of the 24 cases the missiles passed through both lobes, and escaped from the cranium at the opposite side of the head; 1 of the patients died and 7 recovered. In 9 of the 24 cases the missiles were not removed; 6 of the patients died and 3 recovered. In 14 instances the occipital lobes were penetrated; of the patients, 6 died. Of the entire number, in 3 the missile passed completely through and out of the skull: 1 patient died and 2 recovered. In 5 of the entire number the missiles were removed; 2 patients died and 3 recovered. In 6 of the entire number they were not removed; 3 patients died and 3 recovered. The cerebellum was penetrated in 6 instances, in 3 of which the ball passed completely through and escaped from the skull. All of these patients died. Of the remaining 3, in 1 the missile was removed and the patient died. Of the 2 in which the missiles were not removed, 1 patient died and 1 recovered. The frontal and parietal lobes suffered in 4 instances, and 2 of the patients died. Of the entire number, the balls were removed in 3 instances; 1 patient died and 2 recovered. In one case the ball was not removed; this patient died. In 6 instances the frontal, temporal, and sphenoidal lobes were penetrated conjointly. In each of these instances the missile escaped primarily. Three of the patients died and 3 recovered. The frontal, temporo-sphenoidal, and occipital lobes were involved simultaneously in 8 instances; 6 patients died and 2 recovered. In 3 of the 8 cases the missiles escaped primarily; 2 patients died and 1 recovered. In 2 instances the missiles were removed; 1 patient died and 1 recovered. The balls were permitted to remain in 6 instances, and all the patients died. Two examples of conjoined perforation of the parietal and occipital lobes were found, of which 1 ended fatally and 1 in recovery. In the fatal case the ball had escaped primarily. The ball was removed in the successful case. The temporo-sphenoidal and occipital lobes were implicated in 4 instances, and 2 patients died. One of these results followed the primary escape of the missile. The other ball was removed, and the patient recovered. Of the 2 in whom it was not removed, 1 died and 1 recovered. In 1 case of the 140 the ball traversed the temporo-sphenoidal lobe, pons, and crura cerebelli; this patient died. The following table of the 140 cases will enable the reader to note the facts more readily than can be done from the text:

LOBES OF BRAIN IMPLICATED.	BALLS REMOVED AND ESCAPED PRIMARILY.			BALLS NOT REMOVED.		
	No.	Died.	Recovered.	No.	Died.	Recovered.
Frontal	33	17	16	27	13	14
Parietal	6	1	5	5	4	1
Temporo-sphenoidal	15	3	12	9	6	3
Occipital	8	3	5	6	3	3
Cerebellar	4	4	0	2	1	1
Frontal and parietal	3	1	2	1	1	0
Frontal and temporo-sphenoidal	6	3	3	0	0	0
Frontal, temporo-sphenoidal, and occipital	5	3	2	3	3	0
Parietal and occipital	2	1	1	0	0	0
Temporo-sphenoidal and occipital	2	1	1	2	1	1
Temporo-sphenoidal, pons, and crura cerebelli	1	1	0	0	0	0
Total	85	38	47	55	32	23

It is to be seen with a glance that the missiles were removed or escaped primarily in 85 of the 140 cases. Of the 85 patients, 47, or 55·3 per cent., recovered. In 55 of the 140 cases the missiles were allowed to remain unmolested; of the patients, only 23, or 41·8 per cent., recovered. This showing places the rate of recovery when the missiles escape primarily and are removed 13·5 per cent. higher than when they were allowed to remain unmolested. The rate of recovery under similar circumstances was 17 per cent. as shown by the series of 236 cases selected from Dr. Wharton's collection. The difference of percentage between these two series of cases is too small to be of special practical utility. However, the great care that was exercised by Dr. Arnold in the collection of the 140 cases makes the deductions that can be derived from them especially valuable. Dr. Arnold read the history of each case carefully and established the facts on which the conclusions are based by topographical measurements. In many instances the facts were verified by comparing them with the report of the autopsies of the cases. Only such of the 140 cases as possessed a reasonably complete history in all important respects were reported. It is interesting also to note the frequency of primary escape of missiles from the skull, and the relation which the escape bore to the frequency of recovery.

Tabulated Statement of the Cases in which Missiles escaped primarily:

FROM	No.	Died.	Recovered.
Frontal lobes	3	1	2
Parietal lobes	0	0	0
Temporo-sphenoidal lobes	8	1	7
Occipital lobes	3	1	2
Cerebellar lobes	3	3	0
Frontal and parietal lobes	0	0	0
Frontal and temporo-sphenoidal lobes	6	3	3
Frontal, temporo-sphenoidal, and occipital	3	2	1
Parietal and occipital lobes	1	1	0
Temporo-sphenoidal and occipital lobes	1	1	0
Temporo-sphenoidal, pons, crura cerebelli	1	1	0
Total	29	14	15

It is noticeable, from observation of the preceding statement, that a majority of the patients recover when the missiles escape primarily. The difference, however, is but a slight one, still this difference is an argument in favor of removal. It appears, by comparison of the two tables, that the results are much better when the missiles are removed by the surgeon than when they escape primarily. The greater force of the missile and the greater injury inflicted by it in the latter instance are substantial reasons for the dissimilarity of the results.

It can be stated, in view of the preceding results, as a principle that a ball should be removed from the brain. It is now proper to inquire as to the causes of death in connection with these forms of injury. Abscess of the brain was the cause of death in 42 (18 per cent.) of the entire number of cases of the first series (236). In 13 of the 42 cases (31 per cent.) abscess followed removal of the ball at various periods of time. In one instance it occurred seven years after removal. Usually, however, its occurrence was closely associated with the time of the removal itself. In the remaining 29 cases of abscess (69 per cent.) the missiles were not removed. In these cases the abscesses formed at various intervals of time—from a few days to thirteen years. In three of the latter instances abscess formed seven years after the receipt of the injury.

We will inquire now as to the subsequent condition of patients in certain cases of so-called recovery. Fourteen were more or less afflicted with headache. Of these, in two only had the missiles been removed. Eight suffered from some form of paralysis of the trunk or limbs, and in but one of these had the missile been removed. Six suffered in a degree from mental impairment; in two of these the ball had been removed. In three instances partial or total blindness followed, in all of which the missiles remained in the brain. Epilepsy resulted in three cases, in one of which the ball had been removed. Sudden death while under excitement followed in three cases, in none of which the ball had been removed. In one case in which the ball had not been removed death followed a year after from pressure on important parts within the cranium. Of the 66 cases in which the missiles were removed from the brain, 27 (41 per cent.) ended in complete and permanent recovery. Of the 170 cases in which the missiles were permitted to remain in the brain, but 20 per cent. of the patients are reported to have recovered without sequels. It does not matter whether or not a ball may become encysted so long as it appears from the majority of cases that a larger percentage recover when this form of missile is removed than when it is allowed to remain unmolested and amenable only to the efforts of Nature. It is doubtless true that in certain individual instances a patient might survive longer if a ball were allowed to remain unmolested, yet sooner or later, in the majority of these cases, disaster will occur. An encysted ball may gravitate toward the base of the brain, and, if it does not cause disturbance or death *en route*, it will be quite certain to do so at a later period. The possibility of a ball becoming encysted, and the method of its occurrence, can have but little practical bearing in the light of past experience, and the possibility of its occurrence or non-occurrence should not be given serious weight at the present time, except the consideration be coupled with recommendations which will lead to a far more frequent encystment than has heretofore taken place.

If a ball should be removed, how should it be done?

Mr. Thomas Longmore says in Holmes's "System of Surgery," vol. ii, p. 188: "If the site of lodgment . . . is obvious, it should be removed with as little disturbance as possible, but trephining for its extraction when the place of lodgment is not known . . . is an unwarrantable operation." I think all judicious surgeons of the present time will concur in this assertion. The removal of a ball from the brain is divisible into certain steps:

1. Ascertaining its location.
2. The selection of the most feasible route by which to reach it when located.

A ball may be located by probing the canal it has made in the brain-structure, if it has taken a straight line and is still lodged in the line of the course primarily taken. If, however, it has infringed in its course on a prolongation of the dura mater, or if the course has deviated for any other reason than this one, the missile is manifestly inaccessible to the touch of a probe that is introduced at the entrance wound of the ball. To attempt to locate a ball in the brain by passing a probe of any pattern or material whatever along a devious track is not only unsurgical, but dangerous and culpable. It therefore follows that the surgeon should be able to determine at what point the ball-track deviates from a straight course at all times. This requires a delicate and cautious hand, a large, light probe, and the aid of gravity when it can be consistently utilized. The aluminium probe recently suggested by Dr. Fluhrer combines both the necessary lightness and the proper size for the purposes of exploration. A probe which is to be introduced into the brain should be quite as large at or near its middle as at the advancing extremity, since the form of the body of the probe serves to guide the advancing end correctly at all times, with reference to the center of the wound. The bulbous-end probe with a stem-like handle—Nélaton's, for instance—is not the proper instrument to introduce into the brain, for it may be carried astray unless the stem is kept exactly at the middle of the opening in the brain made by the ball. The ordinary small probe employed for the purpose of exploring other portions of the body should not be introduced into the brain for the purpose of locating a ball. Flexible probes, too, should likewise be avoided, for no one can tell the number of the false tracks which they may make by reason of the inability of the surgeon to control the advancing end, or calculate as to its exact situation.

Having selected the proper probe, then, when possible, place the head in such a position as to gain every advantage in the insertion of the probe along the tract of the wound that the force of gravity can offer. The probe is passed along the track of the missile, as long as it passes easily, until finally the ball, the opposite side of the cranium, a prolongation of dura mater, or a change in the course of the track is encountered. The character of the obstacle arresting the advance of the probe may be determined by the firmness of the opposition, the direction taken by the probe, and the distance it is inserted. If the ball is touched, the opposing force will be slighter than if the probe impinges on the opposite side of the cranium. If a prolongation of the dura mater or a sudden curve in the ball-track is met with, the absence of the metallic and bony nature of the obstacle will be manifest. In either instance only a slight degree of force should be employed. If the ball is touched, it may then be removed with a suitable forceps passed along the tract of the wound to its location. If the ball is near the opposite side of the cranium, say within an inch or so of it, and can be located from without, it should then be removed through a counter-opening, especially when difficulty is experienced in grasping it with a forceps through the line of entrance. It is far better that a ball be removed by a short route through sound brain-tissue than that the already injured brain-tissue in the course of its track be further lacerated in almost vain endeavors to seize and remove it. The former method not only limits the amount of brain injury, but affords at once an opportunity for the establishment of through-and-through drainage. If the ball has gone straight through to the opposite side of the skull and has ricocheted from the point of impingement, the establishment of a counter-opening at this point not only permits of thorough drainage, but affords the only rational route by which to seek for the ball at its final location. It is proper to say at this time that the direction a ball may take after striking the inner table of the opposite side, and the distance it may go afterward, are purely matters of conjecture. No practical rule for the guidance of the surgeon can be laid down in these cases. The ball should be sought for, however, in the direction of the inclination of the skull at the point of impingement. The distance the ball will go from this point will depend, of course, largely on the momentum and the amount of the resistance encountered. It is often somewhat difficult to determine the location at which to trephine so as to make the counter-opening at the point of actual or perspective impingement of the missile. In a case of my own in which the point of impingement was so low on the opposite side of the head that the situation of the arrested end of the probe could not be well judged by the eye, I resorted to the following plan, which pointed out the location at once, and can not fail to do so at all future times: A perfectly straight, long probe of large size was carried carefully along the track of the ball till the extremity was arrested by the opposite side of the skull. About four inches of the probe then remained outside of the skull. A string was then attached to the extreme end of the outer portion, and was caused to pass across the convexity of the cranium in several directions (Fig. 1) to the side opposite the point of entrance. The portion of the string corresponding to the extra-cranial portion of the probe was caused to be parallel with this portion of the probe in each instance while being carried across to the opposite side of the cranium. The point of crossing of the lines on the opposite side corresponded of necessity to the actual or perspective location of the distal end of the probe, as the parallelism of the lines with the probe was preserved in each instance (Fig. 2). Thus the proper situation for making a counter-opening through the skull was indicated unerringly at once. In my own case the inner surface of the button of bone that was removed bore the imprint of the ball impingement.

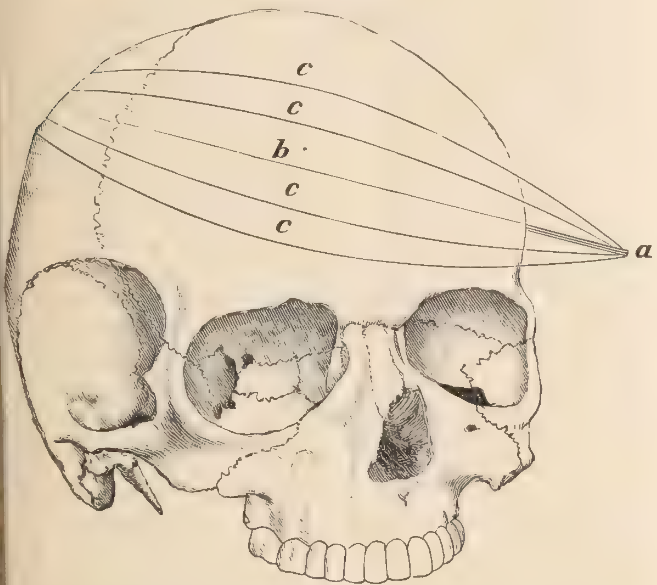

FIG. 1.—*a*, the extra-cerebral portion of a probe; *b*, the line taken by the probe through the brain; *c c c c*, lines placed parallel with the probe with the aid of a string.

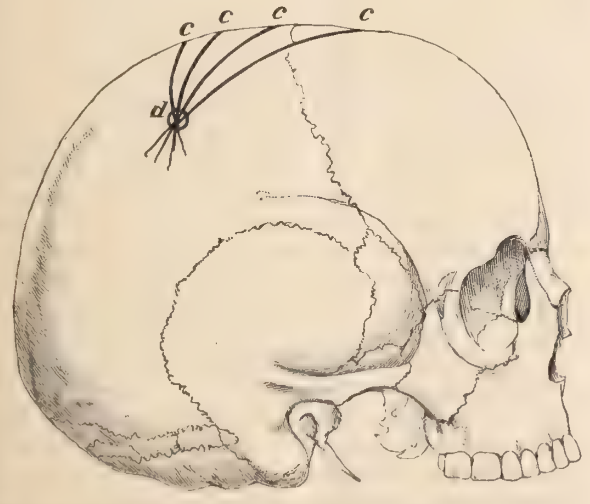

FIG. 2.—*c c c c*, lines converging on opposite side of head; *d*, point to trephine.

The modifications of the functions of the special areas and nerves of the brain that may result from a gunshot wound of it are entitled to respectful consideration as means of determining the *course* taken by the missile. They are not to be relied on, however, in locating the resting-place of the missile. Their condition ought always to be interrogated at the onset, and, in fact, should be carefully scrutinized during the entire observation of the case. The later manifestations of these areas will be more distinct and trustworthy than the manifestations following soon after the receipt of the injury, because the shock and the inflammatory state will obscure or obliterate them in the latter instance. At the present time the induction balance and the telephonic probe are the agents which, above all others, have reduced the localization of a missile within the cranium to a scientific certainty in the majority of cases. I will leave the description and the explanation of the practical use of these implements to the gentleman who is to follow, Dr. Girdner, whose name is indissolubly associated with each of them. In concluding this portion of the subject, let it be said at once that a ball that can not be located should be permitted to remain unsought. Finally, force should never be used in probing a ball-track in the brain for the purpose of locating the missile. Fragments of bone that may be scattered along the tract of the wound should be removed with forceps when discovered. The fragments of skull found in and about the wound should be preserved and carefully fitted together and compared with the area of the opening in the skull to determine if other fragments have escaped notice. Finer fragments in the course of the wound will escape with the discharges, and the head should be so placed as to facilitate their escape at the most dependent point of the wound.

Good Drainage of the Wound.—Good drainage can be secured best by making a counter-opening and by enlarging somewhat the bony rim of the point of entrance. In the case of my own already mentioned, after the counter-opening had been made, numerous carbolized horse-hairs were passed along the track of the ball and allowed to protrude from both openings of the wound. With this material for drainage of the brain, individual hairs can be withdrawn as healing advances, as has been done for a long time in other parts of the body. This method will provide continuous drainage until the withdrawal of the last few hairs will permit the final healing of the wound. If a counter-opening is not made, then the external wound should be kept open, and the discharge from it facilitated by a dependent position of the lower end of the track. If the brain-substance protrudes, it can be retained in place by a thin sheet of aseptic metal, with a small opening in the center to correspond with the opening of the wound of the brain. If the dependent end of the wound tends to close, its patency can be maintained by inserting into it through the opening in the plate a small, short, fenestrated drainage-tube. The upper open end of the tube may be sufficient for the purposes of drainage without the fenestra. The introduction into the wound and through it of a gentle stream of antiseptic fluid with the first dressing, and afterward when necessary, should be practiced. Salicylate-of-sodium solutions and Thiersch's fluid are highly commended for the purpose. A counter-opening at the seat of impingement of the ball enables the surgeon to continue the search for the ball with the least possible injury to the brain-structure. If the ball is not found at the seat of impingement, it will have ricocheted from this point in a course that is best indicated by the direction of the inclination of the inner table of the skull at the point of impingement. However, this indication is too problematical to permit free probing of the brain in the absence of other evidence of the course taken by the ball. A careful examination of the brain at this point will probably reveal the direction taken by the missile, which should be followed carefully as in the former instance. In the case of my own this plan was observed, and, although the signs indicative of the secondary course of the ball were plainly to be seen in the brain-substance, still it was not practicable to touch the ball with a probe. The autopsy revealed the fact that the probe had gone the entire distance traveled by the ball from the point of impingement, yet the ball had not been touched by the probe because it had dropped or gravitated between the borders of a deep sulcus which ran nearly at right angles to the secondary track of the ball. The ball could not have been touched by a straight probe without damaging the, as yet, healthy brain-substance directly between it and the counter-opening. The counter-opening will drain not only the primary, but the secondary track of the ball as well, if the force of gravity will permit. It will likewise favor the discharge of pus that may be formed as a result of the presence of the ball or the injury of the brain. The ball itself may be aided to gravitate toward the counter-opening, especially if it has remained unmolested. Good drainage must be sought for at all times; in fact, if good drainage is not established, little benefit need be expected from other steps of treatment.

Combating Inflammation.—This indication need not occupy our time now, for the means employed to meet it at the present offer but little of a novel nature when compared with those of the past. Finally, the strictest antiseptic technics must be employed with every step, whatever plan of treatment is selected. I respectfully submit the following conclusions for your consideration:

1. A bullet should be removed from the brain as soon after its reception as its situation can be determined and the patient's condition will permit.
2. A bullet should be removed from the brain at a later period if symptoms supervene and it can be located.
3. A bullet that has been located in the brain and has not been removed should be removed before the supervention of symptoms, when it assumes a migratory character.
4. No effort should be made to remove a ball from the brain if it can not be located.

CONSIDERATIONS BEARING UPON THE ÆTIOLOGY OF
NON-UNION OF FRACTURED BONES.*

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In addition to the patients with ununited fractures who have been presented before this society during the past few years, I desire to present another one, the account of whose case is as follows:

H. B., aged fifty years, on January 13, 1887, while alighting from a street car, stumbled and fell, and the wheel of a passing truck rolled over his elbow and arm, producing a comminuted fracture of the lower end of the left humerus, involving the elbow joint, and an oblique fracture of the same humerus at about the junction of its lower and middle thirds. He at once came under the treatment of my colleague, Dr. C. S. Benedict. During the first week after the accident the arm was simply supported by coaptation splints and bandaged to the side, while the forearm was supported in a sling. At the end of a week a plaster-of-Paris splint was applied, extending from the tips of the fingers to and including the shoulder joint. At the end of eight weeks no consolidation had taken place at either of the fractured points. The humerus was then freely manipulated and the surfaces of the fragments were rubbed together, and again immobilized. The result of this was practically nil, and, after two weeks, daily percussion, after the method of Thomas, was instituted and kept up for ten days for ten minutes each sitting. Considerable local soreness resulted, but without perceptible effect on the fractured bone. Upon suspending the percussion all immobilizing apparatus was removed, and the patient was instructed to discard his sling and try to use the hand and forearm as much as possible.

Three weeks later, being three months and a half after the original injury, consolidation at the articular end had taken place, with considerable motion at the elbow joint, but the condition of the shaft of the humerus was unchanged. He was then, April 30, 1887, operated upon by me at the Hospital of the Post-graduate School. Upon exposing the seat of fracture a typical false joint was found to have been formed. The ends of the two fragments were each covered with a thick, well-formed fibrous layer, and the broad, oblique surfaces entering into the new joint were closely held together by a capsule-like envelope of dense fibrous tissue, which restricted the motion in the false joint to only a slight rocking. Each end was refreshed by the removal of a thin slice from it with a saw, and the two were then secured in apposition by three sutures of silver wire which perforated the bones. In the dressing, drainage was provided for by strands of catgut. The arm was immobilized by a plaster case, which included the entire limb. The operation wound healed by first intention, except at one of the points occupied by the drainage-strands, where a sinus persisted. At the end of two months, during which immobilization was maintained, no tendency to unite was discoverable at the seat of fracture; no callus had been thrown out; the loosening of the wires again permitted some rocking motion, while a persistent sinus had been added to the case.

The extended immobilizing case was now discarded. Short splints for coaptation and support were applied to the humerus only, and the patient was allowed to use his arm at will.

On September 24th, being about five months after the first operation, his condition remained unchanged, except that a second sinus had formed. The general health of the patient was good. I now again exposed the bone by incision; the wires, being loosened by absorption of the bone or by being broken, had for a long time been simply useless foreign bodies imbedded in the part; they were removed; a small exfoliated fragment of bone was also removed; the ends of the bones, which were bare and devoid of any appearance of reparative power, were thoroughly scraped, as was also the whole cavity in which they lay; the wound, after proper cleansing, was stuffed with a sterilized sponge, dusted with iodoform. The dressing was completed by the application of an absorbent pad and a side-splint. At the end of ten days the primary dressing was removed; the deeper portion of the sponge was firmly adherent; this sponge was left undisturbed for five days longer, when the greater portion of it—all that had not become invaded by granulation tissue—was cut away. The portion of sponge thus left in the tissues, which was of considerable amount, caused no subsequent disturbance. The wound, now a superficial granulating surface, healed rapidly after this and proceeded to complete cicatrization.

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* Read before the New York Surgical Society, March 28, 1888.

Meanwhile an abundant callus developed about the seat of fracture, and at the end of four weeks pronounced consolidation was evident. At the end of eight weeks the amount and firmness of this callus were still greater, but its full ossification was evidently delayed, for a slight lateral bending could still be impressed upon the humerus at the seat of fracture. No antero-posterior bending could be made, on account of the greater massing of the callus in front and behind than at the sides, thus buttressing the bone more strongly in front and rear. The arm was, however, strong and useful, and the patient was able to resume work at his trade, that of a carpenter.

The patient I now present, and upon examination there may be felt the abundant masses of callus described, and still the slight lateral mobility may be brought out. The mobility of the elbow joint is nearly normal.

In connection with this case I would like to raise this question, viz.: To what extent are defects of immobilization responsible for delayed or non-union after fractures of the long bones? or, in other words, Is the occurrence of non-union after fracture presumably an evidence of imperfect or improper treatment?

The opinion of Celsus, incidentally given in the only allusion to non-union of fractured bones made by that ancient author, in the sentence which reads, "When the bones happen not to unite, because they have been often opened and often moved," has been repeated by Malgaigne in his teaching that "when union fails to occur, the treatment is most frequently to blame for it," and both express the generally received opinion, lay as well as professional, that failure of union on the part of a fractured bone is *prima facie* evidence of neglect or improper treatment. P. Bruns ("Deutsche Chirurgie," Lief. xxvii, II. Hälfte, p. 579) is more guarded in his statement than Malgaigne, saying that consolidation is now and then abnormally delayed or wholly deficient in some cases of fracture, notwithstanding the apparently unexceptionable conduct of the patient and correct treatment by skillful surgeons, without any adequate cause being discoverable, adding, however, that, notwithstanding these admissions, the *sole* cause of non-union is certainly often enough improper or imperfect treatment. The natural result of this doctrine is to expose every surgeon under whose care a fractured bone has been in which union is delayed or fails altogether to the charge of malpractice and to a loss of confidence in his professional skill, if not to a suit at law.

It is doubtless true that in the history of very many cases of ununited fracture defective immobilization can be proved to have been present. On the other hand, it is equally true that in an immense number of instances gross defects of immobilization are common without interfering with the steady consolidation of the fracture. Such are fractures of the ribs and of the clavicle in general, and a large proportion of fractures of the humerus and of the femur. Gunshot fractures of the shaft of the humerus in a marked degree present obstacles to securing adequate immobilization in their treatment, especially in the field in time of war, and yet, out of 2,900 cases of shot fracture of the shaft of the humerus treated expectantly, as recorded in the "Medical and Surgical History of the War of the Rebellion" (Part II, vol. ii, p. 673), in six only did non-union result. The only case of delayed union after fracture of the clavicle which I have yet met with was that of an apparently robust young man in whom unusual care to immobilize the fracture had been taken by the surgeon under whose treatment he had been by the application of a plaster bandage. Nevertheless, at the end of four weeks, when I first saw him, no callus had been thrown out, and the fragments were as movable as if the fracture had just been sustained. Under my advice all dressings were discarded, and the patient was bidden go to work. At the end of two weeks he returned with an abundant ossifying callus uniting the fragments. I heard nothing more of him thereafter.

The frequency with which false joints have developed in fractures occurring among sailors on shipboard, who in some cases are many weeks without receiving skilled attention, has been noted (Norris, Curling, Harrison, Bruns), and these cases have been considered as illustrative of the effects of lack of immobilization, particularly as in many instances consolidation took place after reaching port under proper hospital care. No consideration of these cases can be complete, however, without taking into account also the defective hygiene of such sailors both before and after injury—the character of their diet, their crowded and imperfectly ventilated sleeping accommodation, and their long confinement on shipboard—all which tend to create constitutional conditions not conducive to repair of injuries of any kind.

The frequent failure of passive and active movements to prevent ankylosis at the elbow, for instance, after excision of the joint surfaces, the invariable repair of fractures of the lower extremity of the radius in the many instances in which that fracture receives no treatment at all, the healing of fractures of the ribs and of the clavicle—these all are doubtless due to the extent and activity of the nutritive processes in the cancellated tissue involved in the injuries named.

The dense compact tissue of the shaft of the humerus or the femur presents conditions less favorable for nutritive activity than the parts just mentioned. It is to be expected, therefore, that whatever causes,' local or general, may be present in an individual case tending to lessen reparative energy would be more likely to determine absolute failure of repair in these bones than in others. The relative proportion of such failures may be calculated from the statistics compiled by Bruns (*op. cit.*, §§ 4 and 413), which include 19,455 fractures of the arm and forearm, thigh and leg. From the figures given by this author I find that, if the relative frequency of non-union after fracture of the bones of the forearm is taken as the unit of comparison, non-union in fractures of the bones of the leg is three times as frequent, and of the femur and humerus each six times as frequent, the proportion of cases of non-union to the entire number of cases of fracture of the particular bone being nearly the same in each of these two last-named bones.

Granted, therefore, that fractures of the shaft of the femur and of the humerus are more frequently followed by non-union than those of other bones, and that the construction of the tissue of the shaft of these bones is such as to render them more powerfully affected by any causes that tend to hinder repair, the question recurs, Ought defects of immobilization to be considered as the sole cause of arrest of repair in any considerable proportion of cases? From the sphere of this question I would exclude cases of exaggerated neglect and intentional free movements of the fragments. The question of defective immobilization in most of these cases has simply to do with the thoroughness of attempts of reposition of the displaced fragments and their retention by sufficiently efficient apparatus, of extension and counter-extension, the use of this or that kind of retentive apparatus, the inclusion or non-inclusion of neighboring joints in the immobilizing appliances, and such like matters. Certainly, in the great majority of cases, the results of such imperfect treatment are limited to the production of excessive callus and to deformity and shortening of the bones. That in some cases where immobilization has been incomplete non-union has resulted does not necessarily imply that this result was due to the defective immobilization. Very pertinent to this point is the testimony of Girdner ("Annals of Surgery," 1887, vi, p. 30), that, in the treatment of fractures in insane patients, whose restlessness made it difficult to properly adjust and immobilize the fragments, he was always able to obtain bony union, except in cases of general paresis, in which class of patients, although they were, as a class, more manageable than patients with most other forms of insanity, osseous union was the exception, and greatly delayed union, soft fibrous union, or, more frequently, complete non-union, was the rule. May it not be that, in a much larger proportion of cases than has hitherto been acknowledged, a more severe inquiry would elicit other causes, either local or constitutional, to which the non-union would be properly referable rather than to the defective immobilization? The observations of Macewen as to the agency of a leaflet of the torn fibrous capsule of the patella, by becoming interposed between the fragments in cases of fracture, in producing the failure of bony union which is common after fractures of that bone, are suggestive that similar strips of periosteum may become torn up and interposed between fragments, and interfere with union in fractures of other bones more frequently than has hitherto been recognized. In a case of compound comminuted fracture of the humerus recently under my care I found large fragments entirely stripped of their periosteum, and it is easy to conceive of the stripping up of portions of periosteum to a less extent in less severe injuries, and yet sufficiently extensive by their entanglement between the fragments, to delay or entirely prevent union.

As to constitutional causes, Otis ("Hist. of the War of the Rebellion," *loc. cit.*) quotes Neudörfer as explaining the rarity of non-union after gunshot fractures of the humerus by the statement: "Pseudarthrosis, as a rule, is an evidence of a constitutional disease of the blood, which, among soldiers generally, and especially at the years in which they take the field, is rarely to be found." Bruns, again, in speaking of the ætiology, in general, of non-union of fractures, declares that "the cause of pseudarthrosis remains entirely undiscoverable in very many cases." And Packard ("Internat. Encyclop. of Surg.," iv, 43) states that non-union "may occur under the best treatment, and in persons seemingly of good health."

If, then, constitutional conditions indisputably determine non-union in many cases, and in the vast majority of instances defective immobilization fails to prevent union, it is more reasonable to refer failure of union, when it does occur, even in those cases in which the immobilization has been defective, to the coincidence of constitutional causes, however difficult of demonstration, rather than to the defective treatment. It is easy to conceive, also, of cases in which the reparative energy of the tissues is weak, but in which, nevertheless, repair would ultimately take place under favorable conditions. In such cases defects of immobilization in the early history of the case might be sufficient to overwhelm the feeble local reparative power, and determine ultimate absolute non-union. But it is plain that even in these cases the treatment is only one of the causes that have produced the result.

Constitutional conditions, if they exist, tending to retard the union of fractured bones, should declare themselves in more than one bone in the same individual if multiple fractures co-exist, or if different bones are fractured at different times, unless, indeed, it is maintained that the constitutional state was a temporary one, as is undoubtedly the case in some instances, as from pregnancy, scurvy, and certain acute diseases. I can cite from my personal observation two cases bearing upon this point.

The first was in the person of a healthy young man, twenty-five years of age, who sustained a fracture of the right femur through the upper part of the middle third from a fall from a wagon upon the frozen ground. Some years before he had fractured the other femur; after due treatment in the usual length of time for that former fracture he had resumed use of the limb, which was apparently healed, but a gradual bending of the femur at the site of injury followed until a ∫-like bend had been produced which caused an unsightly and prominent projection upon the front of the thigh, and shortened the limb more than three inches. In this position full consolidation finally took place. The new fracture, which came under my care, was treated by Buck's extension and plaster-of-Paris bandages. In the ninth week sufficiently firm union had apparently taken place to make it prudent for him to begin to walk upon it. In the twelfth week the firmness of the union was still apparently satisfactory, but a slight outward curvature at the upper part of the thigh was noticeable. The shortness of the opposite limb caused a manifest strain to fall upon the femur at this point in walking and accounted for the bowing which had taken place. Two weeks later a further marked increase in the bowing had occurred. Crutches were advised. At the end of seven months he returned to me with a still greater degree of outward bending; meanwhile he had been an inmate of a hospital, but had received no special treatment for the rectification of the deformity. I now had constructed for him a modification of a common hip-joint extension brace whereby the limb was kept extended, the weight of the body in walking was supported by a perineal crutch, and a broad band of elastic webbing was made to exert constant inward traction at the point of bending. Rapid straightening of the limb was effected by this device, with the result of lengthening it two inches. At the end of a month the femur had regained its natural direction. He was dismissed with the injunction to continue the use of the brace for a time. I have not seen him since.

The point of interest about this case in this connection is the existence of a constitutional condition in an apparently healthy young man which at two different periods, some years apart, occasioned delay in firm ossification of a fractured femur.

The second case is in the person of the patient now before you, whose history after fracture of the humerus has been rehearsed. Twelve years previous to this latter injury he fractured his left leg. At the end of sixteen weeks, he states, no union had taken place. He was then encouraged to use the limb, with the support of proper splints, and gradually, as he walked upon it, consolidation took place, though with considerable deformity.

The result of the considerations which I have now presented is to make me feel that there is room to question the soundness of the teaching that imperfect immobilization is *often* the sole cause of non-union, or even the chief cause thereof. It seems to me rather that the weight of evidence is such as to justify the assignment to constitutional states, and to local conditions not within the control of the surgeon, a yet larger rôle in the ætiology of pseudarthroses than is generally recognized.

THE PAPILLITIS OF SUNSTROKE.

By L. A. W. ALLEMAN, M. D.,
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Although the literature of the subject is extremely meager, a sufficient number of cases has been reported to establish the fact that certain intra-ocular lesions—notably papillitis—are met with in sunstroke.

This papillitis of sunstroke, resulting, as I believe it does, from a disturbance of the central nervous system by the excessive heat, furnishes a most interesting subject for consideration, and seems to be most strongly confirmatory of the theory that papillitis may be produced by a disturbance of the vaso-motor innervation.

I shall first give the notes on a case of papillitis following sunstroke which recently came under my own observation, and then briefly review some of the cases previously reported.

Case I.—T. J., a blacksmith, aged twenty-eight, presented himself at the Eye and Ear Dispensary of the Germantown Hospital on July 23, 1887, complaining of dimness of vision in the left eye, and giving the following history:

Three weeks previous to his visit to the dispensary, and during a period of intensely hot weather, he had been engaged in shoveling coal into the furnaces at the Midvale Steel Works. The heat in the furnace-room was excessive, and at noon on the second day on which he had been thus employed he had been overcome by the heat and compelled to quit work. He was very dizzy, and fell several times while returning home.

On the following morning he noticed that the entire left side of his body was slightly numb, and that vision in the left eye was impaired, all objects on the left side seeming to be enveloped in a mist. He at no time suffered from headache, the numbness subsequently disappeared, and he complained of nothing but the ocular trouble for which he presented himself.

The pupil of the right eye was normal, that of the left eye moderately dilated and sluggish. Vision in R. E., $\frac{20}{20}$; L. E., $\frac{0}{30}$. An ophthalmoscopic examination of the right eye showed the media clear and the fundus normal. In the left eye the media were clear, but the disc presented a marked papillitis, being greatly swollen and prominent, its outlines indistinct and showing the characteristic "woolly" appearance of papillitis. The veins were full, and the arteries slightly diminished in caliber. The periphery of the retina was normal in appearance.

As, unfortunately, the patient did not again visit the dispensary, the progress of the case could not be noted.

Dr. Hotz has reported* seven cases of sunstroke attended with ocular troubles, from which the following cases are selected:

Case II.—Mr. A., aged twenty-nine, was prostrated by excessive heat in July, although he was not exposed to the direct rays of the sun. He became dizzy and fell. When he recovered consciousness he had lost the use of his left arm, and suffered from violent frontal headache.

To his right eye the air seemed to be in a wavering motion. Two months later headache ceased, and the sight of the right eye became very dim.

Examination, August 22d, L. E., V. = $\frac{20}{30}$. Fundus normal. R. E., fingers at six feet; hemianopsia, the temporal half of the visual field being completely obscured. Media clear. The nasal half of the disc red, and so swollen that its boundary can not be discovered.

September 11th.—Retina and optic disc normal in color. Perception restored in temporal half of the field of vision.

October 6th.—V. = $\frac{20}{70}$, with $- 40 = \frac{20}{20}$.

Case III.—T. M., laborer, aged forty-eight. In July, after working in the sun and drinking freely, became suddenly dizzy and lost sight in the lower halves of the fields of vision.

Examination, November 7th, R. E., V. = $\frac{20}{50}$; L. E., V. = $\frac{20}{100}$. Slight epithelial opacities in both corneæ, of which the patient could give no information. Pupils very small but active. Optic discs very red, slightly swollen; boundaries quite indistinct. Veins full, arteries about normal.

March 3d, following.—R. E., V. = $\frac{20}{20}$; L. E., V. = $\frac{20}{30}$.

Case IV.—T. S. H., merchant, aged thirty-two. Examination August 24th. Suffered from sunstroke in previous year. Since then he has been troubled with the perception of an apparent wavering motion of the air, and the sight of the left eye

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* "Amer. Jour. of the Med. Sci.," July, 1879.

> has gradually failed. R. E., V. = $\frac{20}{20}$. Fundus normal. L. E., fingers at ten feet. Disc very red, streaked, and swollen, its outlines indistinct. Surrounding retina cloudy.
>
> *September 15th.*—L. E., V. = $\frac{20}{20}$. Retina clear; disc slightly flushed, but its boundaries well defined.
>
> Case V.—M. J. B., farmer's wife, aged thirty-four. In July became overheated while cooking; she did not, however, become unconscious. Severe headache followed, and the sight of the left eye began to fail.
>
> Examination, September 17th, R. E., V. = $\frac{20}{20}$; L. E., V. = perception of light. R. E., general hyperæmia of fundus; L. E., papilla swollen, outline of disc very indistinct, general cloudiness of whole fundus, but most marked in the region of the disc and outer portion of the field.

Dr. Katzenbach * has also reported an interesting case of sunstroke:

> The patient, a merchant, aged thirty-nine, abstemious in habits and with no history of venereal disease, while surf-bathing on August 2d was overcome by the heat. His respirations were slow and shallow, pulse very feeble and flickering, temperature subnormal, and sphincters relaxed. Upon regaining consciousness he complained of intense headache, photophobia, clouded and double vision. The pupils were normal; the ocular muscles were not impaired in action; he rapidly became very deaf, but suffered no pain in the ears.
>
> An ophthalmoscopic examination was made, and retinal hæmorrhages and swelling of the optic discs were discovered.
>
> The appearance of the ears was normal. An examination of the fundus, made a week later, showed a very marked improvement in the intra-ocular symptoms.

W. H. Kesteven † reports a peculiar case, interesting in this connection:

> A woman, while exposed to the heat of the sun, was suddenly seized with an acute pain in the head, and saw everything green and red. A careful examination, made two days later with Holmgren's wools, showed that "she could detect red and green when strong shades were shown her, but blue, yellow, and gray she could not tell as such, but called them all green." This color defect was present in only one eye. An ophthalmoscopic examination of the fundus showed that the vessels were tortuous and the discs somewhat swollen and prominent.

The limited number of cases reported will scarcely justify us in drawing any very definite conclusions as to prognosis and treatment. In the cases of Dr. Hotz the treatment was chiefly with Heurteloup's leech to the temples and potassium iodide internally. He is inclined, from the progress of the cases remaining under observation, to give a very favorable prognosis.

If the origin of the trouble is, as I believe it to be, in a vaso-motor paresis, we may expect most excellent results from the descending galvanic current.

Direct exposure of the visual field to intense illumination by sunlight may, it is alleged,‡ produce an inflammation of the retina and optic nerve; but in the foregoing cases no severe or unusual exposure occurred, and in many instances the patient had been entirely protected from any glare of light.

We may then, I think, conclude that papillitis produced in some manner by sunstroke is not infrequently met with. It now remains for us to discover, if possible, in what way the papillitis is produced—whether it is a symptom or a sequela, a possible manifestation of the conditions known as thermic fever and heat exhaustion, or secondary to lesions which are present in these diseases.

Michel * believes that in sunstroke a "high degree of stasis in the cerebral veins and an œdema of the cerebral substance" exists, produced by a thickened condition of the blood, and that papillitis is due to this interference with the intracranial circulation. Hotz concludes that the papillitis is a secondary affection resulting from a primary lesion produced by the heat within the cranial cavity. He believes the headache, which in many of his cases was a prominent symptom, shows a meningeal irritation, and that in some cases there may have been present a serous exudation at the base of the brain.

These disturbances, being communicated to the sheaths of the optic nerves, gave rise to the intra-ocular lesion. Neither of these explanations is entirely satisfactory. No changes peculiar to sunstroke are found in the blood, and, although some hyperæmia of the brain may at times be present, this is not a sufficient cause for the production of an inflammation of the nerve-ending. Gowers, † indeed, distinctly affirms that no marked vascular alterations in the eye are seen corresponding to changes in the cerebral circulation.

That a meningitis may follow sunstroke and that a papillitis may follow such a meningitis is undoubted. But this explanation will not satisfy the conditions in the foregoing cases. The meningitis occasionally caused by sunstroke is, as a rule, a meningitis of the convexity, and a meningitis of the convexity rarely produces an inflammation of the nerve.

Again, a meningitis requires time for its production, and when produced, time is again required for the propagation of the inflammation to the nerve. Neuritis is not an early symptom of meningitis. It is seldom seen, says Dr. Gowers,‡ before the end of the first week. Once he has seen it as early as the fifth day, but then in a case of tubercular meningitis.

In all the cases given above, visual disturbance was an early symptom, coming on immediately after the sunstroke, in some cases growing more marked, in others remaining about the same until the time of the examination, when a papillitis was discovered. We can not say positively that this papillitis had been present from the beginning in every case, but in the two cases where an examination was made early it was found: in Dr. Katzenbach's case on the seventh day, and in Mr. Kesteven's on the second. In these cases a sufficient time had not elapsed for the appearance of a meningitis which could have given rise to the papillitis. We must therefore seek some other explanation.

Sunstroke is a fever, and the phenomena which constitute the symptoms of sunstroke are due to the effect of the heat upon the great centers of the sympathetic nervous system. H. C. Wood, who has very thoroughly investigated the subject, seems to have established this fact beyond doubt. He shows[*] that, when a man is exposed to so high a temperature that the heat he is constantly producing can not be eliminated, his temperature will gradually rise, and he will suffer from a thermic fever. If, however, the center which controls the formation of heat should become exhausted by its efforts to control heat-production, or be paralyzed by the excessive temperature, heat will then be very rapidly produced, the temperature will rise with terrible rapidity, and the patient will be suddenly prostrated. Should the heat paralyze, not the inhibitory but the vaso-motor center, heat-production will be lessened, and its dissipation greatly increased; the patient will then present the phenomena of heat exhaustion.

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* "N. Y. Med. Jour.," December 3, 1887.

† "Trans. of the Clin. Soc. of London," 1882, xv, p. 101.

‡ "Diseases of the Eye," Stellwag, p. 175.

* "Lehrbuch d. Augenheilk."

† "Med. Ophthal.," 2d ed., p. 121.

‡ "Diseases of the Brain," vol. ii, p. 305.

To account for the ocular trouble, it seems by far the most probable hypothesis to assume that this same disturbance of the nervous system which produces the general symptoms—such as nausea, vomiting, headache, giddiness, numbness, and convulsive movements—extends at the same time to the vaso-motor apparatus of the eye, and then manifests itself as that nutritive disturbance which we recognize as papillitis; or, as Pagenstecher[†] puts it, "the irritation conveyed through the nerve-tract of the sympathetic to the disc induces the changes of the nerve-fibers, the hyperæmia, and even the development of new vessels, and in this manner a swelling and obfuscation of the disc and the adjacent parts of the retina are brought about."

Let us compare the condition of sunstroke with another morbid process in which we frequently meet with a papillitis—namely, cerebral tumor. We find they have a certain group of symptoms in common.

The papillitis, chromotopsia, clouded vision, disturbance of other special senses, nausea, vomiting, vertigo, headache, numbness, and convulsive movements, sometimes epileptoid in character, are all frequently found at some time in the course of the case, both in sunstroke and in cerebral tumor.

To account for these symptoms in cerebral tumor, says Hughlings Jackson,[‡] we must find some hypothesis capable of explaining not only the condition of the disc, but also all of the symptoms which the tumor produces, called the symptoms of gross organic disease; and the hypothesis which, to his mind, best answers these requirements is that the tumor, not as a pathological product of any special nature, but in its general character as a foreign body, produces an irritation which gives rise both to the papillitis and the accompanying symptoms.

This theory differs little from that attributed to Benedikt, that the tumor, by its presence, excites a widespread neurosis of the sympathetic fibers, and this neurosis manifests itself in the symptoms above mentioned; the sequence in papillitis being, according to Jackson, "tumor, changes of instability, effects produced by the latter on the muscular walled arteries of the optic nerve and centers."

The symptoms in cerebral tumor and sunstroke seem to me to be sufficiently similar to point to a common origin—in one case the irritation of the sympathetics by the tumor acting as a foreign body, and in the other a similar irritation by the excessive heat.

Why this irritation, when projected upon the optic nerve, should give rise to an inflammatory process, is as impossible for us to explain as why the exposure of the extremities to cold or dampness should in some instances give rise to an inflammation in some remote and presumably healthy organ.

Nor can we comprehend why, in sunstroke, the nervous phenomena, such as numbness and paresis, should be unilateral, and why, in some instances, a monocular and in others a double papillitis should be produced; nor, again, why a tumor in one hemisphere should produce a papillitis on the opposite side.

The problems do not, however, appear any less difficult of explanation by the light of any of the various theories advanced to account for the origin of papillitis. But whether or not we are inclined to accept the theory of vaso motor neurosis as offering the most probable explanation of the origin of the inflammation of the nerve-ending in cerebral tumor, it seems to me to be the only way in which we can possibly account for the presence of a papillitis immediately after sunstroke, and by far the most credible explanation of the origin of the lesion in all the cases given above.

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FOUR CASES OF PERNICIOUS ANÆMIA.

By W. L. WORCESTER, M. D.,

ASSISTANT PHYSICIAN TO THE MICHIGAN ASYLUM FOR THE INSANE AT KALAMAZOO, MICHIGAN.

During my residence in this institution two cases of pernicious anæmia have been under my care. Another case, which I believe to have been of the same nature, although a diagnosis was not made during life, occurred under the treatment of Dr. Thomas R. Savage, and I assisted at the autopsy of a case occurring in town. Two of the patients dying in the asylum were examined post mortem, and in each instance microscopical examination was made of the diseased organs. The pathological changes found, with the results of treatment in the remaining case, are perhaps of sufficient interest to warrant publication.

Case I.—G. K., a carpenter, aged thirty-two, native of Germany, married, was received as a patient on March 1, 1882. He had made an attempt at suicide three years previously by throwing himself in front of a railway train, and had probably not been of sound mind at any time afterward. For some time he had been noticed to be pale, and had complained of ill health. Two weeks before his admission he made a second attempt at suicide by swallowing a quantity of ammonia liniment.

At the time of his admission he was evidently suffering from melancholia; was in moderate flesh, weighing 143½ pounds, but very feeble. Puse, 104. Skin pale and of a yellowish tint. During the month of March he became still more anæmic, failed perceptibly in strength, and began to be troubled with œdema of the feet and ankles. On March 29th his blood was examined. It appeared very thin and pale when drawn, and under the microscope was found to be very deficient in red corpuscles, which were very unequal in size and irregular in shape, very few preserving the circular outline. They showed little tendency to cohere in rouleaux. (A hæmocytometer was ordered, with a view to quantitative estimate of red blood-corpuscles, but, as it had to be imported, was not received during the patient's lifetime.) On the 3d of April an ophthalmoscopic examination was made, and hæmorrhages were found in both retinæ. Nothing abnormal was found in the urine. Fowler's solution was prescribed in three-drop doses, three times a day, increased on the 10th to five drops, on the 17th to six drops, which was continued until June 10th, when it was omitted on account of diarrhœa and gastric irritability. The blood was examined from time to time, and the proportion of red corpuscles evidently decreased during the progress of his disease. His weight increased to 180¾ pounds, but the increase was due in great measure to œdema and effusion into the serous cavities. Death took place on the 14th of June.

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[*] "System of Medicine," Pepper, vol. v, p. 395.

[†] "R. L. G. H. Reports," vol. vii, part ii, p. 162.

[‡] "Medical Times and Gazette," March 19, 1881.

At the autopsy, general œdema was found, with abundant effusion into the pleuræ, pericardium, and peritoneal cavity. Subcutaneous fat was well developed. The muscular substance of the heart was pale and flabby, and the wall of the left ventricle was thinned; the valves were healthy. The liver was enlarged and fatty; its weight was 5 pounds 12½ ounces. The spleen weighed 1 pound 9½ ounces, and was dark and friable. The kidneys weighed 8 and 8½ ounces, respectively; they were pale in color. The stomach presented numerous ecchymoses in the mucous membrane, which was evidently thinner than normal in its whole extent.

Microscopical examination showed a moderate degree of fatty degeneration of the heart, liver, and kidneys, and great atrophy of the mucous membrane of the stomach, which was transformed into a fibrous tissue, infiltrated with leucocytes, of not more than one fourth of the thickness of the normal mucous membrane, and in many portions presenting scarcely a trace of glandular structure. Brunner's glands, in the pyloric region, were unaffected.

Case II.—Jane B., a single woman, aged thirty-eight, was received as a patient on March 26, 1883. She became insane at the age of sixteen, and had never been of sound mind since. She was decidedly corpulent, and her circulation was feeble, but no valvular lesion of the heart could be discovered. She had repeated attacks of depression, during which she imagined that her food was poisoned. In March, 1884, after an attack of this nature, in which she had eaten but little for a number of days, she was noticed to be very pale, with a yellowish tinge to the complexion. Her appetite improved, but the anæmia and weakness increased, and on the 28th of March her blood was examined and found to present changes similar to those mentioned in the preceding case. Estimated by Gowers's hæmocytometer, the number of red corpuscles was 780,000 in a cubic millimetre, or 15·6 per cent. of the normal proportion. The red corpuscles were very irregular in shape and unequal in size, and showed little tendency to cohere. Temperature, 101° F.; pulse, 116. There was some nausea, but no emaciation. There was great shortness of breath on any exertion. Fowler's solution was prescribed in three-drop doses, increased gradually to eight drops three times a day in the course of four weeks. Full doses of pepsin with hydrochloric acid were also administered, to supplement the deficient digestive power of the stomach. On the 31st of March an abscess was found to be forming under the chin, which was opened April 3d, and was followed by erysipelas of the right side of the face. From this time on she steadily improved; she ceased to be troubled by nausea, took food better, and gained in strength. Numerations of blood-corpuscles showed steady gain as follows: April 11th, 20 per cent. of the normal number; April 21st, 23 per cent.; May 20th, 46 per cent.; May 27th, 62 per cent. The patient was now fully convalescent, and progressed uninterruptedly to recovery. The administration of arsenic was continued for some months, and caused marked pigmentation of the skin, which, however, passed away entirely on suspension of the drug.

She continued to enjoy her usual health until September, 1887, when she was again attacked with similar symptoms to those of the previous illness. At this time she was under the care of Dr. F. H. Welles. On the 17th of October he notes as follows: "For the past few days she has seemed to fail quite rapidly in strength, and now appears very anæmic. Lips pale, conjunctivæ gray, pulse feeble and rapid, complains of many vague pains and aches, refuses food, but takes about three pints of milk per day. Sol. potass. arsenit., 0·2 c. c., prescribed. . . . 23d. Her symptoms rather increasing in severity. She is to-day transferred to the infirmary. Her face has assumed a lemon-color." From this time she gradually failed in strength; diarrhœa set in and she died on the 4th of November. No examination of the blood was made during this illness. Unfortunately, permission to make a post-mortem examination could not be obtained.

There can, I think, be no reasonable doubt as to the diagnosis in the foregoing cases. In the following case a diagnosis was not made during life, and the notes are not so definite on some points as might be desired. I only saw the patient at the autopsy, and base my opinion of the nature of the case largely upon the gross and microscopical post-mortem appearances:

Case III.—E. S., a patient in the female department of the asylum, under the care of Dr. Thomas R. Savage, was attacked about the 20th of June, 1878, with obstinate vomiting, which lasted for about six weeks, during which time she had several attacks of hæmatemesis, and was nourished mainly by the rectum. Subsequently the irritability of the stomach diminished, so that she could take a fair amount of food. Notwithstanding that she did not emaciate, her strength gradually failed, and she died on the 11th of September. At the autopsy the skin was of a yellowish color; adipose tissue present in rather more than usual amount. No visceral lesions of importance were discovered, but there was very marked atrophy of the mucous membrane of the stomach, in which microscopical examination showed an almost complete absence of glandular structure.

Case IV.—Mr. B., a citizen of Kalamazoo, died in April, 1881. The diagnosis of pernicious anæmia was made by Dr. H. O. Hitchcock, of Kalamazoo. The prominent features of the case were shortness of breath, extreme pallor, and nausea. At the post-mortem examination the adipose tissue was abundant; skin of a yellowish color. The bones were of soft consistence, and the marrow was of darker color than normal. Heart and kidneys presented evidence of a moderate degree of fatty degeneration. Other viscera appeared healthy, with exception of the stomach, which showed marked thinning of the mucous membrane. On microscopical examination, the marrow of the bones was found to be increased at the expense of the osseous tissue. There was some fatty degeneration of the heart and kidneys, and the mucous membrane of the stomach was greatly atrophied, although the destruction of glandular tissue was not so great as in the preceding cases. It would, however, be safe to say that in no part of the organ which was examined did the secreting tissue equal one fifth of that in a healthy stomach. Brunner's glands were not perceptibly affected.

Fenwick appears to have been the first to call attention to atrophy of the stomach in a class of cases evidently identical with the pernicious anæmia of Biermer ("Lancet," 1877, No. 10). In my cases the gastric disease would seem sufficient to account for the symptoms, although it might not, perhaps, be justifiable to assert that it was the primary lesion. As Fenwick, in the article above referred to, states that atrophy of the stomach is a frequent complication in cases of cancer, even of remote organs, it may be that in pernicious anæmia it is in some way a result rather than a cause of the general malnutrition.

My second case would seem to illustrate the benefit of the use of arsenic. Within a very few days after its administration was begun the patient, who up to that time had steadily failed, showed evidence of improvement, which went on without interruption to complete recovery.

THE REMOVAL OF THE SPINAL CORD.

By E. R. AXTELL, M. D.,
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Every pathologist who has attempted to remove the spinal cord has, no doubt, sighed as the magnitude of his work loomed up before him. No matter how skilled one may be with post-mortem implements, the present method of removing the cord has ever been and ever will be most tedious and laborious, and, until an easier method is found, our pathology of spinal-cord affections will be retarded; only those who are most patient, and with more time than the average pathologist has to spare, being able to derive fresh knowledge from study in this wide-reaching field.

The present method of removing the cord—the method now almost universally adopted—has been given us by the German medico-legal authorities (see Dr. T. P. Smith's translation of Virchow), and consists briefly of the removal of the cord by opening the vertebral column from its posterior aspect.

"The skin and subcutaneous fat are first to be divided exactly over the spinous processes; the muscles are then to be removed from the sides of these latter and from the arches of the vertebræ. . . . Then, by means of a chisel, or a vertebral saw, the spinous processes, together with the adjoining portions of the vertebral arches, are to be detached and removed. The dura mater is now exposed, and, after being examined, it is to be carefully slit open longitudinally. . . . The roots of the nerves are next to be divided on both sides by a longitudinal incision; the lower end of the cord is to be carefully taken out, its anterior connections are next to be gradually separated, and, finally, the superior extremity is to be removed from the occipital foramen." This is all well enough, and some excellent specimens have thus been obtained, but, as a very general rule, the removal of the cord to the majority of pathologists is a herculean effort, and only done under the greatest stimulation.

Every institution will furnish numerous instances in which most interesting cases of spinal-cord trouble have not been examined post mortem owing to the inaccessibility of the cord, or where a small portion was made to answer for the entire cord. Thus we are daily losing valuable contributions to the pathology of spinal troubles. If the cord could be removed quickly and easily, an impetus would be given to this study that would be of great good. Our pathology of myelitis, softening, atrophy, sclerosis, ataxia, apoplexy, tumors, and palsy might be greatly widened, and with increased knowledge of pathology comes increased knowledge of treatment.

And in what direction can a remedy come? But one way presents itself, and on superficial thought the way looks not difficult. A pathologist sees at every autopsy a small, delicate white mass of spinal cord peeping from its long, narrow bed as the higher nervous organs are being removed, and almost involuntarily is tempted to grasp it and seek to draw it out. Yet how futile such an effort would be! Yet does not this instructive movement suggest a remedy?

Could we but separate the spinal cord from its bony attachments—even at the loss of its coverings—would not much be gained? Once separating it, it could readily be withdrawn and examined. But how could such a separation be effected?

The spinal canal is long, and in its course is many times curved. At various sections it has different shapes and different diameters. And this canal contains the cord. This is a flattened cylinder about sixteen inches in length, and extends in the adult to the lower border of the first lumbar vertebra. In its course it presents two enlargements, the cervical and the lumbar. Yet "it does not *nearly* fill the canal in which it is contained, its investing membranes being separated from the surrounding walls by areolar tissue and a plexus of veins" ("Gray," 10th ed., page 612).

Now, is not the way clear? Is it not possible to divide the cord from its attachments without injuring the cord in the least? Can not a thin, hollow, vertebrated cylinder be made to do duty?

The brain having been removed, the opening of the spinal canal is at hand. Now, with such a cylinder, with sharp biting saw-teeth on the first segment, is it not plausible that it could be made to embrace the cord and to divide its attachments on slight rotation? The entire cord could be rendered "taut" by slight extension on the projecting portion. One by one the spinal nerves could be divided—the cylinder being gradually pushed downward—conforming to the curves of the canal just as Sayre's vertebrated probe conforms to the curves of a sinus. When the *filum terminale* had been reached, some slight mechanism might be introduced to cut the nerves here transversely, or they might be divided by a knife introduced between the vertebræ, the spinous processes of which in this region are horizontal in direction.

The entire cord now rests in the cylinder, and upon withdrawing this, the whole and perfect cord is before us, having been neither pressed upon nor bent in its extraction. And not alone the cord need be present, but, by having a cylinder of good size, the membranes, especially the arachnoid and pia mater, may be left intact.

Thus could the cord be extracted most readily and without difficulty. The need of such a method is most obvious.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by
D. Appleton & Co.
Edited by
Frank P. Foster, M. D.

NEW YORK, SATURDAY, MAY 5, 1888.

MEDICAL MEN AS OFFICERS OF THE COURT.

The recent work of Vibert, of Paris, on the medico-legal aspects of railway injuries still further emphasizes the truth of Sterne's saying "that they order these things better in France." M. Vibert, who has the title of Medical "Assessor," seems to occupy the position of adviser to the court in suits for damages received by means of tramways, railways, and other vehicles.

The medical jurisprudence of France has always been distinguished for acumen, ability, and impartial justice, and she has set an excellent example to other nations in this matter. There is no doubt that the ends of justice would be better served in this country by the permanent employment of a medical adviser to all courts of record where trials for damages and criminal suits turn upon the medical testimony in the case. The country would be spared much of the apparent conflict of medical evidence if the lawyer's questions to medical witnesses on all matters of opinion were submitted to the scrutiny of a court expert, and the not uncommon spectacle of two or more alleged "experts" on the witness-stand, one after another, testifying to opinions diametrically opposite would be a rare event. Not alone to the medical profession would the court expert be of service, but to the more important cause of justice and right dealing. A law providing for the appointment of apublic medical referee, who should act as court adviser on all medical questions, would be of great advantage to the people.

The present practice has resulted in bringing discredit on the profession, and in some cases the defeat of justice, by developing biased testimony. In many of our most widely known trials the lawyers start out on a hunt for "experts" holding an opinion favorable to their side of the question, and they alone are subpœnaed. Such being the common practice, both sides to the controversy bestir themselves, and the consequence is, as already stated, two diametrically opposite opinions, and in such cases the jury often go wrong. Had there been a medical referee in the Guiteau case, for example, much time and money would have been saved, and justice reached more speedily. Such a position would need to be filled with great care, and, the responsibility being great, the compensation should be commensurate, and no man should be appointed to such a place except by the votes of those qualified to judge of his capacity. A medical expert to our highest city court, for instance, recommended for appointment by the Academy of Medicine, would at once command respect for his attainments and deference to his opinion. The world in general is said to move; why should not the wheels of justice move in the direction indicated?

MINOR PARAGRAPHS.

CARBON DIOXIDE AS A REMEDY FOR DYSPNŒA.

Our Paris correspondent writes that the treatment of certain forms of dyspnœa by the inhalation of carbonic-acid gas, as proposed by M. Weill, has made some progress. He has his patients breathe pure carbonic acid with Limousin's apparatus, or any of those used for breathing oxygen. They use it for from two to five minutes once or twice a day, taking from two to four litres of gas. The patients that our correspondent has seen treated were mostly those who had advanced lesions of the lungs or chronic forms of laryngitis. Most of them were subject to a continued oppression, with attacks of dyspnœa from time to time; some, as often as from four to twenty times a day, would be taken with dyspnœa and cough. When the gas was given during the attack, it seemed to cut short the oppression, and the palpitations that followed were very much diminished. the cough stopped, and the respiration fell to half what it had been, while the patient experienced at once a feeling of well-being. When the inhalations are practiced between the attacks they have a similar effect on the respiration, and the patients breathe freely; but, besides this, they have an action in preventing the paroxysms and in diminishing their frequency and intensity. Patients who had had twelve attacks during a day have only four or five, sometimes only three, and these attacks are so short that they can bear them very easily. Again, they can lie down at night, which some of them had not been able to do. Others slept and took food, which they could not do before the treatment. There seems to be an abolition of the reflex sensibility of the pharynx and larynx from using this gas which might be taken advantage of in operations on the throat. In fact, this new analgesic method can be applied to all the mucous membranes, and, as the gas can be inspired without danger to any one, it makes another agent to add to those used in the inhalation treatment of chest troubles, which is now such a rage among physicians.

THE "OMAHA CLINIC."

We have received the first number of a monthly journal of sixteen pages, edited by Dr. J. C. Denise, with the assistance of Dr. James Carter and Dr. J. E. Summers, Jr. The number contains four original articles, editorials, college notes, proceedings of societies, a summary of progress in therapeutics, and a budget of medical items. Its *raison d'être* is thus explained: "It is our judgment that this section of the country should have a medical journal of its own, and we proceed to furnish it, to the best of our ability." This first number of the "Clinic" bears evidence of ability on the part of its editors, and the price, $1 *per annum*, places it within reach of all for whom it is intended—"the four thousand earnest workers in this noble calling, in the Western States and Territories." We wish the new journal success.

ITEMS, ETC.

The Practice of the late Dr. E. G. Loring has, we are informed, been transferred, with the case books, to Dr. William Oliver Moore, who will carry it on at his residence, No. 5 East Thirtieth Street.

Changes of Residence.—Dr. Landon Carter Gray has moved from Brooklyn to No. 6 East Forty-ninth Street, New York City.

Dr. H. N. Vineberg has moved from No. 123 East Fifty-ninth Street to No. 229 East Sixtieth Street.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 1, 1888:

DISEASES.	Week ending Apr. 24.		Week ending May 1.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	5	11	9
Scarlet fever	212	26	209	38
Cerebro-spinal meningitis	3	5	6	7
Measles	75	8	93	6
Diphtheria	149	45	162	59
Small-pox	10	7	17	7

The Health of New York City.—During the four weeks ending Tuesday, April 24th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhus, 2 cases; typhoid fever, 37 cases and 15 deaths; scarlet fever, 692 cases and 111 deaths; cerebro-spinal meningitis, 19 cases and 20 deaths; measles, 223 cases and 21 deaths; diphtheria, 550 cases and 144 deaths; small-pox, 81 cases and 20 deaths.

The "Cincinnati Lancet-Clinic" announces that it will issue a daily edition during the session of the American Medical Association, on the 8th, 9th, 10th, and 11th inst.

The Medical Department of the University of Pennsylvania.—At the commencement exercises held on Tuesday, the 1st inst., the degree in medicine was conferred on one hundred and fourteen candidates. A portrait of Dr. R. F. A. Penrose was presented to the trustees by Dr. H. N. Hall, of the graduating class.

A Powerful Emetic.—An apothecary in Lewiston, Me., is said to have received the following order: "Mister Druggist: Please send ipecac enough to throw up a four-year-old girl."

The "Philadelphia Medical Times."—It is announced that Dr. Frank Woodbury has withdrawn from the management of the journal, which will hereafter be conducted by Dr. W. F. Waugh.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 15 to April 28, 1888:*

Sternberg, George M., Major and Surgeon. Having been instructed by the President to proceed to the island of Cuba, for the purpose of continuing his investigations of the methods of preventing the spread of epidemic diseases, will, in connection with his present duties, report to the Secretary of the Treasury for further instructions. S. O. 89, A. G. O., April 18, 1888.

Ewen, Clarence, Captain and Assistant Surgeon. Granted leave of absence for six months, with permission to go beyond sea. S. O. 85, A. G. O., April 13, 1888.

Baily, J. C., Lieutenant-Colonel and Assistant Medical Purveyor. Will transfer the public funds for which he is responsible, and the charge of the Medical Purveying Depot in New York City, temporarily to Captain Henry Johnson, Medical Storekeeper. S. O. 92, A. G. O., April 21, 1888.

Baily, Joseph C., Lieutenant-Colonel and Assistant Medical Purveyor. Granted leave of absence for twenty days on surgeon's certificate of disability, with permission to apply for an extension. S. O. 92, A. G. O., April 21, 1888.

Par. 13, S. O. 89, A. G. O., April 18th, is revoked by Par. 1, S. O. 93, A. G. O., April 23d, and Sternberg, George M., Major and Surgeon, U. S. Army, is directed to proceed to the island of Cuba for the purpose named in the letter of the President, addressed to the Secretary of War on the 17th inst. Upon the completion of this duty he will return to his proper station, and submit his report to the President on or before June 25, 1888.

Vickery, R. S., Major and Surgeon. Granted leave of absence for four months, with permission to apply for an extension of two months and to go beyond sea. S. O. 95, A. G. O., April 25, 1888.

By direction of the President, Surgeon Remus C. Persons, U. S. Navy, is assigned, temporarily, to the charge of the Army and Navy General Hospital, Hot Springs, Ark., during the absence, on leave, of Major Richard S. Vickery, Surgeon, U. S. Army, surgeon in charge. S. O. 96, A. G. O., April 26, 1888.

Wood, Leonard, First Lieutenant and Assistant Surgeon. Granted one month's leave of absence, with permission to apply for an extension of two months. S. O. 41, Department of Arizona, April 18, 1888.

Anderson, Charles L. G., First Lieutenant and Assistant Surgeon. Granted one month's leave of absence from June 1, 1888. Resignation accepted by the President, to take effect July 1, 1888. S. O. 92, A. G. O., April 21, 1888.

Change of Station.

Arthur, William H., Captain and Assistant Surgeon. Ordered from Fort Niagara, New York, to Fort Bowie, Arizona, to take effect on the expiration of his present leave of absence.

Black, Charles S., First Lieutenant and Assistant Surgeon. Ordered from Fort Davis, Texas, to Fort Sidney, Nebraska. S. O. 86, A. G. O., April 14, 1888.

The operation of Par. 17, S. O. 79, c. s., A. G. O. (so much thereof as relates to George E. Bushnell, Captain and Assistant Surgeon, U. S. Army), is suspended until May 1, 1888. S. O. 90, A. G. O., April 19, 1888.

Crosby, William D., First Lieutenant and Assistant Surgeon. Ordered for duty at Jefferson Barracks, Missouri, after being relieved by Assistant Surgeon William H. Arthur, and upon the expiration of the leave of absence granted him in S. O. 60, A. G. O., March 14, 1888. S. O. 86, A. G. O., April 14, 1888.

Appointment.

Rafferty, Ogden. To be assistant surgeon, with rank of first lieutenant, March 26, 1888.

Promotion.

Girard, Joseph B., Captain and Assistant Surgeon. To be surgeon, with the rank of major, March 22, 1888.

Society Meetings for the Coming Week:

Monday, *May 7th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; Boston Medical Association (annual); St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *May 8th:* American Medical Association (first day—Cincinnati); Medical Society of the State of North Carolina (Fayetteville); New York Medical Union (private); Medical Societies of the Counties of Albany (semi annual) and Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Camden (annual—Camden), Morris (annual), and Sussex (annual), N. J., County Medical Societies; Norfolk, Mass., District Medical Society (election—Hyde Park); Franklin, Vt., County Medical Association (annual); Baltimore Gynæcological and Obstetrical Society.

Wednesday, *May 9th:* American Medical Association (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society; Pittsfield, Mass., Medical Association (private); Franklin (annual—Greenfield), Hampshire (annual—Northampton), and Worcester (annual—Worcester), Mass., District Medical Societies.

Thursday, *May 10th:* American Medical Association (third day); Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *May 11th:* American Medical Association (fourth day); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *May 12th:* Obstetrical Society of Boston (private).

Letters to the Editor.

HOUR-GLASS CONTRACTION OF THE UTERUS.

Scipio, Ind., *April 18, 1888.*

To the Editor of the New York Medical Journal:

Sir: In your issue of April 14th is a letter commenting on the case of hour-glass contraction of the uterus reported by me on March 24th. As I am better acquainted with the facts relative to the case than the author of this letter, I deem it not imprudent to correct some of the misstatements made in his letter, and, with a charitable feeling toward him, beg him to reconsider my article and I think he will become "reconciled."

He speaks of my applying my hand to the abdomen after the birth of the child, "with the view of ascertaining the condition of the uterus." My statement was this: After giving the child over to the nurse, I replaced my hand on the lax abdominal wall to follow down the contracting uterus, etc., not for the purpose of examining its condition. In speaking of the pain and hæmorrhage, he suggests that they "showed perverted action in the womb, and furnished aid in the diagnosis which an internal examination would have rendered entirely conclusive, and led to the adoption of obvious measures, etc." Certainly; and the diagnosis was made and proper measures carried out, but not till the lady was anæsthetized. Although my attention was soon directed to the character of the pain, yet my suspicions as to the nature and gravity of the trouble were not fully aroused previous to an examination.

Every practitioner of any experience has frequently seen the placenta expelled by one continuous pain, lasting for several minutes, and accompanied with considerable hæmorrhage.

The half, instead of "full," dose of ergot did not aggravate the symptoms in the least. I confess the ergot was contraindicated, but it was given before a diagnosis was confirmed.

Probably no person has ever officiated in a case of childbirth, if examinations were made, without learning that immediately after the child is expelled the vaginal and uterine canals seem continuous as one, and that a high vaginal examination always shows some portion of the placenta presenting, unless retained above a constriction, although at the time it may be almost or entirely within the uterus. Thus, by a vaginal examination, I found the placenta presenting high up in the canal, not down in the vagina; nor did I find it in the upper segment of the womb adhering to the membranes, as the doctor misunderstands (?). It was in the lower segment, and the membranes at its upper margin were caught by the constriction. Language misconstrued will serve to "perplex" almost any person.

Now, as the literature on this abnormal condition is so "sparse," I would beg of my brother practitioner a report in detail of his case.

Pray tell us, doctor, how many gallons of blood the lady lost in that "profuse hæmorrhage" which had been going on "for several hours" prior to your arrival.

Charles W. Phillips.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of March 28, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Successful Operation for the Radical Cure of Hernia.—Dr. C. McBurney presented a patient upon whom he had operated for the radical cure of hernia. His method of operating (described in detail in a paper read at a recent meeting of the society—"New York Medical Journal," January 21, 1888) consisted in exposing the external oblique aponeurosis above the external ring, incising the aponeurosis so that the neck of the sac could be ligated at its very origin. The entire inguinal canal was thus laid open. The upper wall of the wound was then formed by the skin, the external oblique aponeurosis, and the conjoined tendon. These tissues were firmly sewed together with catgut. The skin and aponeurosis forming the lower wall were also sewed together. The open character of the wound was thus insured. The wound was then packed with iodoform gauze, and healing by granulation took place in from four to six weeks. The patient was not allowed to wear a truss. Some patients had been kept under observation as long as two years, and no return of the hernia had been noted in a male subject. The advantages stated for this method were: 1. The ease and simplicity of the operation. 2. The thorough removal of the peritoneal sac. 3. The wound was open so that drainage was not required, and abscess could not occur.

Simultaneous Ligature of the Right Carotid and Subclavian Arteries for Innominate Aneurysm.—Dr. McBurney presented a patient whom he had shown to the society a year and a half before. Previous to the operation there had been a pulsating tumor, measuring three inches in its transverse diameter, which had ascended as high as a point a quarter of an inch above the crico-thyreoid membrane, and below elevated the sternum, the clavicle, and the first and second intercostal spaces; it had been clearly an aneurysm, involving the innominate artery. The right subclavian and carotid arteries had been ligated simultaneously, when the pulsation had at once ceased, and the patient had speedily regained his voice, which had been almost lost. There had been no change in the size of the tumor since the patient was last presented, a small tumor still existing; but the wall of the sac was much thickened and lateral expansion was absent. The patient was shown to the society this second time, as the length of time that had now elapsed demonstrated the permanence of the cure.

Dr. H. B. Sands thought that there was still some lateral pulsation.

Dr. McBurney said that there was certainly no more than there had been eighteen months before.

Dr. Sands referred to the case of a patient operated upon by the president in which lateral pulsation had seemed to persist, but at the autopsy marked thickening of the sac had been found; there had been no actual lateral expansion, but merely a lifting of the tumor with each pulsation.

The President thought that the lateral pulsation in the case under discussion was more apparent than real. If the sac was grasped at its upper part, it would be found that the entire tumor was lifted as the blood passed through it.

Dr. Sands believed that such patients after operation ought to be guarded against any imprudence, since there were many cases in which careful after-treatment was followed by great improvement. In the only successful case of ligation of the innominate for aneurysm (by Dr. Smythe, of New Orleans) the patient had died ten years later from the aneurysm.

The President stated that in his case the patient had died of phthisis twenty-one months after the operation.

Spontaneous Everted Dorsal Dislocation of the Hip, probably due to Rheumatism.—The President exhibited a patient, fifty-four years of age, who, two years before, after suffering for some time with rheumatic pains in the smaller joints, had wrenched his right hip while leaving a horse-car. A month later the hip had become tender and swollen, so that he had been obliged to remain in bed for several days; then one night, while getting into bed, he had felt something give way in the joint, and since that time the limb had been stiff, although he could walk on it. Both knees now contained effusions, and there was grating when the patella was rubbed against the condyles. No other joints were swollen or roughened. The right lower extremity was parallel to the other as he lay in bed, and was considerably everted and shortened an inch and a quarter. The trochanter was displaced upward, backward, and inward, and the outer aspect of the hip was noticeably flattened. The tissues below the anterior superior spinous process were slightly raised, and on pressure a sensation of deep, firm resistance was given, which was not found on the opposite side. The muscles of the thigh were wasted. Voluntary motion was lost, and passive mobility was greatly restricted; flexion and adduction were almost entirely lost; rotation and abduction reduced about one half. A slight grating sensation could be felt. The only other condition which could exist was fracture of the neck of the femur, and of this accident there was no history.

Traumatic Osteomyelitis of the Femur, followed by great Thickening of the Os Innominatum.—The President showed a male patient, thirty-one years old, who two years before had fallen backward in a sitting posture upon a sharp-pointed iron rod, a quarter of an inch in diameter, which had entered his body at the margin of the anus. He had at once suffered much pain in the left hip, and been taken to his bed; a week later a large abscess had been opened on the left thigh just below the perineal fold. During the first month he had had several hard chills and much fever, and he had noticed the present deformity of the thigh and shortening of the limb. Eight months later another abscess had been opened on the inner and outer aspects of the thigh; both these openings were still present, communicated with each other, and were discharging considerable pus. For the last year he had been able to walk about and attend to business. The left lower extremity was about two inches shorter than the right, and was greatly deformed at its upper and outer portion by a marked swelling. The trochanter could be felt, but was not so clearly outlined as usual, and appeared to be thickened. It was displaced upward and outward so far that the outer and upper portion of the thigh was very prominent, and was so rounded and filled out that, at first sight, it suggested an osteo-sarcoma. There had been no change in the deformity during the last year. The anterior portion of the ilium and pubes was so thickened that it extended from a point two inches above Poupart's ligament to an equal distance below. Exploration through the rectum showed that the cavity of the lower pelvis was considerably encroached upon by thickening of the os innominatum.

In reply to a question by Dr. F. Lange, the reporter said that fever had been present for a month after the injury, but that it had ceased after the abscess on the inner side of the thigh was opened. The patient was in bed for a month, during which time the present deformity appeared. There was almost complete ankylosis of the hip joint. In reply to a further question, he stated that a probe introduced into the sinuses did not reach bone.

Dr. Lange thought that the head of the femur was separated from the shaft, but remained within the acetabulum as a necrotic body; it seemed to him to be a case of osteomyelitis of the hip joint. He had seen cases in which there was even more thickening than in the present instance, although the necrosis was limited to the head of the femur. The speaker had presented to the society a few years before a boy who had had abscesses in the iliac fossa, the head of the femur alone being necrosed. It was not necessary in these cases to assume the presence of necrosis in the ilium itself.

In reply to a question by the president, Dr. Lange said that he could not state whether the removal of the head of the bone would put an end to the process or not. Several years ago he had excised the hip joint in a boy for similar disease, and had removed several sequestra from the ilium. The patient had improved, but had died some years later of amyloid degeneration. At the autopsy it was found that the entire ilium was thickened, and was the seat of softening, rarefying osteomyelitis, but there was no necrosis. In the case under discussion it must be inferred from the nature of the deformity that there was a separation of the neck of the femur.

The President said that there must have been a fracture or dislocation at the time of the accident.

Non-union of Fractured Bones.—Dr. Pilcher read a paper on this subject. (See page 486.)

The President said that the occasional interposition of periosteum between the fragments of a fractured patella had been pointed out long before Macewen's paper was published. In the specimen presented by the reader the original separation of the periosteum could not be alleged as the cause of non-union, as the periosteum was so closely attached to the overlying soft parts that it could not fall in between the fragments, as the fibro-periosteal covering of the patella sometimes did.

Dr. C. K. Briddon said that he believed statistics had proved that non-union was more frequent in the lower end of the humerus than elsewhere, that it had been attributed to the distribution of the nutrient arteries, and to the disturbance of the parts in the movements of respiration, which latter would equally apply to ribs, clavicle, and scapula, where union rarely failed. He cited a case where a gentleman had fractured the lower end of the humerus from the application of very insignificant force. There had been constitutional vice in the case, but the site of fracture had been the seat of slight obscure pain for some months previous to the accident. An unfavorable prognosis as regarded union had been given, and the bones had never united; every means short of operative interference had been used; absolute immobilization, followed by needling and the application of the constant and interrupted currents; no more severe measures had been instituted, because the patient had been suffering from advanced cardiac disease. The arm, when incased in a removable metal splint, was as useful as before. In his experience a syphilitic history had been obtained in most of these cases, and antisyphilitic treatment had been beneficial. One cause of non-union might be the long-continued immobilization of the limb with plaster of Paris, especially in the case of the thigh when it was fixed for three or four months; in the latter instance the limb sometimes atrophied, and the skin exfoliated. He would under these circumstances advise the daily removal of the apparatus and the use of massage, and would advise the patient to walk about; use of the limb sometimes assisted union. He had never obtained any good results from Thomas's method of percussion. The speaker did not wish to be understood as opposing the practice of immobilizing the limb in cases of fracture, but only as objecting to too prolonged fixation. He thought that it might even be better to leave detached fragments of bone at the seat of fracture *in situ*, since consolidation might still take place if the wound was thoroughly aseptic. Macewen's investigations into the process of osteogenesis went to prove that the periosteum only furnished the blood-supply, that the source of bone growth was in the bone cells themselves, and that small pieces of completely detached bone in a perfectly aseptic wound formed centers for reproduction, and were not to be regarded as foreign bodies.

Modification of Malgaigne's Hooks for Fracture of the Patella.—The President showed Dr. W. K. Otis's modification of Malgaigne's hooks. (For a description of this instrument, see vol. xlvi, page 734.)

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of April 11, 1888.

The President, Dr. J. Solis-Cohen, in the Chair.

The Loofah, a Vegetable Skin-Scrub for Aseptic Operations.—Dr. John B. Roberts said that the necessity of scrubbing the integument thoroughly with soap and water, in order to remove dirt and secretion, before operating aseptically upon the part, had recently compelled the provident surgeon to carry with him to operations a bristle brush, such as was used for cleaning hands and finger-nails. He had recently saved himself the expense of supplying brushes for emergency operations, and avoided the inconvenience of carrying away from the patients' houses such wetted brushes, by using portions of the peeled and macerated fruit of the loofah or towel gourd (*Luffa Ægyptica*). A few of these segments were carried in his operating case at all times, and, when once used, were thrown away. According to the London "Chemist and Druggist," this gourd was grown extensively in the West Indies as well as in Africa and Arabia; but he had been told it could be cultivated in Philadelphia gardens. It was a cucurbitaceous plant, with fleshy fruit which resembled, in shape and size, the Indian clubs used for calisthenic exercises. When the epidermis, mucilaginous pulp, and seeds were removed from this fruit, there remained the fibrous network or skeleton, which, when dried, acted as well as a scrubbing brush for the skin. This dried skeleton, when wet, was harder than a sponge, though perhaps rather softer than a bristle brush, and acted exceedingly well as a skin-scrub for obtaining an aseptic condition of the skin. He had been able to get with it sufficient friction not only thoroughly to cleanse the skin, but also to produce an erythema in a few moments. This could hardly be accomplished by so soft an article as a sponge, which was, on account of its softness, unsuited for a surgical cleanser.

The prepared skeleton, or loofah, as it was called commercially, was cut, transversely to its long axis, into pieces about two inches long, which, if desired, might afterward be split longitudinally. For his own use, he preferred the unsplit segment, which seemed to have a rather rougher and harder surface, and better removed the dirt and secretions from the crevices of the skin. As the entire loofah could be bought for a few cents, these segments—of which from five to ten could be made from each—cost not more than two cents apiece; to throw them away after using was, therefore, no great extravagance.

It would be understood, he trusted, that this material was available for scrubbing the skin of the patient, but it was not suitable for cleansing the spaces under the surgeon's nails; for that purpose he always carried a toilet nail-brush. His advocacy of the loofah was for cleansing the skin of patients at whose houses a brush for cutaneous purification was often not readily obtainable, though a new and clean scrubbing brush, such as was used for floors, would be perfectly satisfactory.

Ovarian Cyst of the Right Side.—Dr. J. W. White exhibited a cyst which he had removed on the previous day from a patient in whom a diagnosis of pregnancy had been made and persisted in by an irregular practitioner. After removal of the cyst, at the suggestion of Dr. Joseph Price, he removed the other ovary in the hope of checking the development of a uterine fibroid which was discovered during the operation. The cyst and its contents weighed between fifteen and twenty pounds.

Vesical Calculus.—Dr. White also exhibited a large vesical calculus, and the bladder, kidneys, and ureters from the body of a patient who had died in advance of a proposed operation for the removal of the calculus by suprapubic cystotomy. The autopsy showed the existence of pyonephrosis, and Dr. White congratulated himself that he had escaped the necessity of recording a case of ether-death, or a death from shock, to one of which causes the fatal termination would have been ascribed, and, as the specimens showed, unjustly, had the case lived long enough to have come to the operating table. The history was as follows: About five days ago a young man was brought to his office suffering with abdominal pain, but apparently in fair health otherwise. He had a good complexion and there had been no emaciation. The pain was referred to the hypogastrium and the head of the penis, and the symptoms in general were those of stone. A large calculus was discovered immediately the sound passed the prostate, preventing further motion of the instrument. The patient was sent to the German Hospital and placed on a milk diet, rest in bed, etc., and arrangements were made to do a suprapubic cystotomy at 2 P. M., on Tuesday the 10th inst. On Monday the pulse was 82, temperature 99°, and the patient was very comfortable except for the fact that diarrhœa had set in, ten or twelve passages with straining having occurred in the twenty-four hours. But as this so often resulted from a sudden change to milk diet and a rectal tenesmus constantly accompanied vesical tenesmus, little was thought of it. The diet was changed and hourly five-drop doses of deodorized tincture of opium ordered. The urine had a heavy deposit, blood, and considerable pus, but that was to be expected with a large calculus. There was no œdema, and, as stated, the general health appeared good. The patient, however, suddenly sank, and died in the night, without operation. The autopsy showed a stone as large as a duck's egg in the bladder, the tissues being considerably inflamed and hypertrophied, and the caliber of the viscus much reduced. The kidneys exhibited extensive pyonephrosis, very little of their substance being left, and that principally as the dividing walls of the multilocular cysts into which the organs were converted. The ureters were much dilated—so much, indeed, that at first they were supposed to be part of the small intestine.

There were various ways in which pyonephrosis might be produced from vesical calculus. There might be extension of inflammation through a cystitis involving ureters, etc., or it might originate as hydronephrosis through the vesical orifice of the ureter damming back the urine. Or the obstruction might be caused by the hypertrophy of the vesical tissues occluding the ureters, or from the frequent urinations due to a phimosis, rendering necessary, of course, equally frequent contraction of the bladder-walls upon the ureters. This case was evidently of long standing, and was believed to have originated as a hydronephrosis due to damming back of the urine by the hypertrophy of the bladder-walls, causing the great dilatation of the ureters shown in the specimens.

(*To be concluded.*)

Reports on the Progress of Medicine.

DISEASES OF CHILDREN.

By L. EMMETT HOLT, M. D.

The London Scarlatina Epidemic.—The "Lancet" (November 26th) states that during August, September, and October 3,000 patients were admitted into the various hospitals of the city. The mortality was about 7 per cent. A considerable reduction would have been made in this provided the patients had been removed from their homes earlier in the disease. Thus, of 81 deaths in two hospitals, 24 were within forty-eight hours after admission, these being mostly hopeless cases when treatment was begun. Some form of renal disease was the cause of 12 per cent. of the deaths. Including the number of malignant cases in which the kidneys were involved, the number would be somewhat greater. Albuminuria in a considerable degree, or for some time, was present in 15 to 20 per cent. of the patients. Convulsions as complications of nephritis were neither frequent nor serious. Pulmonary complications were present in 16 of 113 fatal cases, usually pneumonia, pleurisy being quite rare and empyema not noted. Laryngitis was a cause of death in 8 per cent. of the cases, and in two membrane was noted. Joint affections were less frequent but more serious among children than among the adults affected. Throat complications were very common and severe. In 12 per cent. of the fatal cases sloughing of the tonsils or the cellular tissue of the neck took place. Isolation should be insisted upon for the entire period of desquamation. Statistics compiled regarding the duration of desquamation in over 2,000 cases, collected in a period extending over five years, shows the lowest average to be in 1879–'80; here in 704 patients it was 56 days; the highest average (1880–'81) in 413 cases being 74 days. Eight weeks should, then, be looked upon as about the minimum period.

The Treatment of Scarlet Fever by Carbolic Acid; a Prophylactic and Curative Measure (Arthur Wigglesworth, "Lancet," October 8th).—This treatment the author has been using now for several years, and the article embraces an experience of nearly three hundred cases. No case has been fatal; only three cases of albuminuria have occurred, only one of glandular suppuration, and none of aural or nasal complications; none of secondary fever or cardiac disease. A rapidity of recovery in severe cases not before seen has been obtained. He administers carbolic acid, liquefied by the addition of 10 per cent. of water, freely diluted in syrup of orange-peel and water. To be efficacious it must be given early in the disease, at short intervals, and in full doses. Three minims of the acid are given to children every two hours day and night for the first three days; after that the interval may be lengthened. To adults the dose given is five or six minims; he has given as much as eight minims, but considers that a maximum dose. It should be given up to the point of producing deep discoloration of the urine. If this is not produced we may be sure the patient is not getting the doses ordered. Failures with the method result from its being begun too late or too small doses being given. The drug is also administered in smaller doses, one minim three times daily, to the other members of the household who have not had the disease. This is stated to be an efficient prophylactic even where intercourse is not prohibited.

Ascending Paralysis as a Sequel of Whooping-cough (Möbius, "British Med. Journal," August 13, 1887, from "Centralblatt für Nervenheilk.").—Six weeks after the beginning of the attack, as the pertussis was subsiding, the loss of power came on gradually. There was complete paralysis of both lower extremities, with absence of knee-jerk on both sides, the plantar reflex was gone on one side and indistinct on the other, the electrical reactions were nearly normal, and there was no disturbance of sensibility. As the legs began to improve and the child was able to stand the arms became affected, with the muscles of the head and neck, and finally the diaphragm. There was no atrophy or anæsthesia, the tendon reflexes were gone in both arms, and the bladder and rectum were normal. The face was at times cyanotic. Gradual improvement then took place, and two months after the beginning of the attack no loss of power could be made out, although the tendon reflexes did not return for some weeks longer. The abdominal and intercostal muscles were unaffected. The diagnosis made was multiple neuritis. The patient was three years old.

Rickets and Syphilis ("Rhachitisme et syphilis"; Cornby, "Revue mens. des maladies de l'enfance," November).—The writer has discussed at length and with great thoroughness the question of the relations of these two diseases, and has effectually refuted the arguments of Parrot, who maintained that they were identical. They correspond neither pathologically nor clinically. The case is cited of a mother who, six years after the birth of a child who was markedly rhachitic, contracted syphilis from her husband. Her next child had hereditary syphilis, but no signs of rickets. One such case controverts the identity theory completely. It is not rare to find evidences in the same patient of both syphilis and rickets, yet, of six hundred cases of rickets examined by the writer, only ten showed cicatrices from syphilis. Hutchinson's teeth he has never seen in rickets. The only cases of interstitial keratitis seen were where scrofula was also present. The different effects of treatment in the two diseases is another point of contrast. Mercury and iodide of potassium have never enjoyed the reputation of being of any value in rickets.

Icterus Neonatorum (Silbermann, "Archiv für Kinderheilkunde," Bd. viii, H. 6).—This vexed question has been discussed anew by the author in a very exhaustive paper. The following are his conclusions: 1. It is hepatogenous, due to resorption. 2. The stasis in the biliary circulation exists in the capillary and interlobular bile-ducts, which are compressed by the branches of the portal vein. 3. This stasis is brought about by a change in the circulation occurring soon after birth, and is one of the results of a general alteration in the blood plasma. 4. This blood change, called forth by the extensive breaking down of red globules soon after birth, is essentially fermentative. 5. The jaundice is more marked the weaker the child, as the blood-fermentative changes are greater than in a strong child. 6. From the destruction of many red blood-globules there results a rich amount of material for the formation of bile pigment, which, as a result of the process, accumulates in the vessels of the liver.

Diphtheritic Paralysis of the Pneumogastric (Alfred Süss, "Rev. mens. des maladies de l'enfance," July and August, 1887).—In this article will be found a careful study of this whole subject. The following are some of the conclusions arrived at: Functional disturbances of the pneumogastric are quite frequent in the course of diphtheritic paralysis. The cardiac symptoms are slowing of the pulse, sometimes followed by acceleration and smallness, and almost always precordial distress and very violent pain. The respiratory symptoms are dyspnœa, great irregularity of both inspiration and expiration, and occasionally Cheyne-Stokes respiration. Gastro-intestinal symptoms may be present—such as violent colicky pains and vomiting of food and mucus. When all these symptoms are associated, death is all but certain, and the course is very rapid, rarely lasting a day. When only cardiac or pulmonary symptoms exist, recovery often takes place—how often it is impossible to say precisely. All these accidents most frequently come on during the course of paralysis of the soft palate, and generally when it is passing off. Hence the prognosis in such cases must be guarded. The only treatment of any efficacy is electricity (faradism) applied to the precordial region or to the posterior part of the chest. The author considers it established beyond all contradiction that the heart clots found so often, and of which so much has been made by many writers, have nothing to do with the symptoms described above; they are most frequently of post-morten formation. Lesions of the medulla, which, moreover, have never been found, are inadequate to explain the symptoms and, most of all, their curability. Finally, the changes in the terminal filaments of the pneumogastric—*i. e.*, those which make up the cardiac, pulmonary, and abdominal plexuses—are the only lesions which afford a satisfactory explanation of the symptoms. These lesions have not thus far been demonstrated post mortem.

Rectal and Dermal Alimentation of Wasting Infants (Sansom, "Medical Press," July 27th).—There is good evidence to believe that cod-liver oil is absorbed when rubbed into the skin. The rectum is more available than the cutaneous surface for supplementary alimentation. Everything employed should be predigested. Peptone enemata are made as follows: "Two tablespoonfuls of raw beef or mutton; to this add two tablespoonfuls of water and let stand one hour; add gradually then four tablespoonfuls of milk heated to boiling. The temperature of the mixture will then be about 140° F.; now add a teaspoonful of liquor pancreaticus (Savory and Moore's) and a pinch of sodium bicarbonate. Let the whole stand for six hours, and then heat to boiling." After straining it may be set aside for preservation. The amount prepared will suffice for several enemata. Not more than two ounces should be given at once, and this only through a soft-rubber catheter. Equal parts of cod-liver oil and warm milk may be shaken up together and administered as an enema. Diarrhœa is by no means a contra-indication to the use of enemata, since these in some cases exert a sedative action on the bowels which is of decided advantage.

Noma (Woronichin, "Jahrbuch für Kinderh.," xxvi, H. 2).—The article contains a very full discussion of the subject, historically and pathologically. The true cause of noma is not yet known. Its localization upon the mucous membrane of the cheek, and in most cases upon one side only, is determined by nervous influences. This is supported by experimentation on dogs. The removal of a portion of the infra-orbital nerve produced an ulceration of the lip on that side. This seemed to be due to successive traumatisms upon parts anæsthetic. The teeth cause the injury in many cases. Full reports of 46 cases are appended, being all that occurred in the Elizabeth Hospital during seventeen years; 22 were in in-patients in a total number of 8,286 treated, or 1 in 376; 24 were in out-patients in a total number of 207,259, or 1 in 8,635. Following measles there were 8 cases, scarlatina 4, whooping-cough with pneumonia 3, pneumonia alone 3, typhoid 2, chronic entero-colitis 2, intestinal catarrh with atrophy 2, and several other affections 1 each. The disease was more frequent in the winter and spring. Its seat was the right cheek in 13 cases, the left in 7. Twelve of the cases were during the third year of life; 27 patients were girls, 19 were boys. Of 22 patients treated in the hospital only 3 recovered.

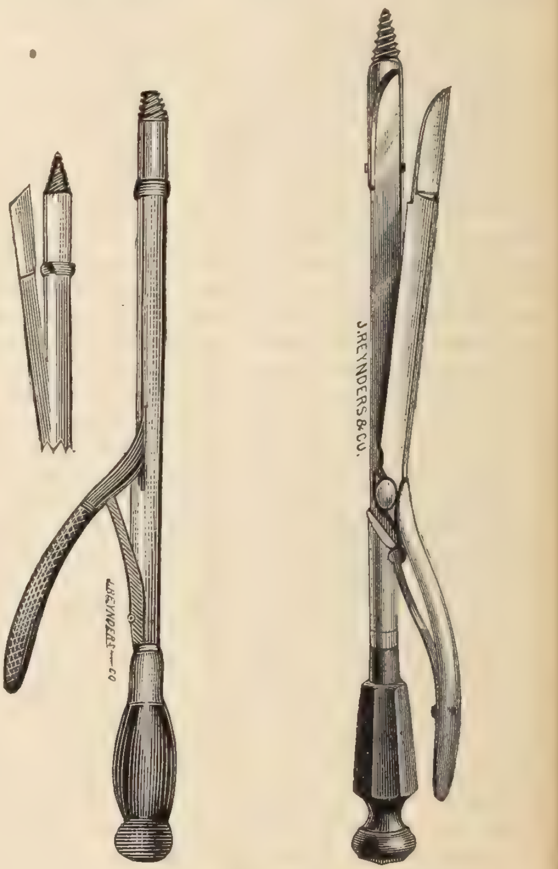
Acute Gastritis of a Severe Type in Infancy (Gastritis gravis acuta im frühen Kindesalter. Seibert. "Jahrb. für Kinderh.," 1887, Bd. xxvi, H. 3).—Three rather remarkable cases are fully reported. The first patient, a healthy infant of eleven months, was suddenly taken with fever, which rose rapidly until it reached 40·4° C. [nearly 105° F.]. In the course of two or three hours it dropped to normal without treatment. Such paroxysms were repeated several times in the twenty-four hours, the only other important symptom being vomiting. After careful watching it was evident that the exciting cause was the milk of a wet-nurse who was discovered to have imbibed stale beer quite freely. The attacks ceased promptly after two days, as soon as a change in the diet was made. The second case was in a baby four months old, who was taken with a chill and high fever which had ranged from 39·5° to 40·5° C. [103° to 105° F.] for a week when it was first seen, the child being nursed frequently and irregularly during this time. When it was removed from the breast the temperature fell from 41·3° to 37° C. [106·5° to 98·6° F.]. The father, a physician, fearing collapse, ordered the breast again, and the temperature rose to 40·2° C. [104·5° F.] in a short time. Subsequent nursings three times daily produced a corresponding number of exacerbations in the fever. It was not until the child was removed from the breast completely that the temperature remained normal, the symptoms having lasted nearly three weeks. Beer-drinking in the nurse was here the probable cause. The third patient was fourteen months old. A meal of indigestible food was followed by vomiting and high fever. On the fourth day articular rheumatism was manifest, which yielded promptly; then the intermittent fever and swelling of the spleen led to the suspicion of malarial disease. Quinine controlled the temperature, but the vomiting did not stop until death, at the end of five weeks. The author concludes (1) that severe gastritis in infants is quite a rare disease, and is very liable, especially at the outset, to be confounded with typhoid fever, malarial fever, or meningitis; (2) the cause is improper breast-milk, due to beer-drinking, etc., or other nourishment partly changed; (3) the treatment consists in prompt change in diet, otherwise it is symptomatic.

New Inventions, etc.

A MODIFIED THOMAS'S PERFORATOR.

By Edward A. Ayers, M. D.

Although the line of advance in the management of obstetrical cases requiring operative delivery by craniotomy or some form of laparotomy is in the direction of Sänger's Cæsarean section, yet craniotomy must continue to be performed in many cases. There are important objections to all the perforators now in use which I think are removed in the present model. Smellie's, Simpson's, Blots's, and Hodge's perforators are all liable to slip beyond the point selected for entrance into the skull and wound the cervix. Their action in enlarging the opening is likewise uncertain, and the cervix can not easily be protected. The German trephine, though certain in its action, has the great objection that belongs to the Thomas instrument—*i. e.*, can not easily be cleansed. It can only be used, moreover, on the cranial vault. Of the Thomas perforator, Professor Lusk ("The Science and Art of Midwifery") says: "Mechanically considered, Thomas's instrument is beyond reproach. It is, however, somewhat more difficult to keep in order than those previously mentioned." I have, as shown in the ac-



companying cuts, so remodeled the instrument that all parts of it can be easily and thoroughly cleansed, while at the same time it has lost none of its mechanical excellences. In using the instrument, by holding the index finger over the blade as well as the point of the gimlet, there can be no danger of wounding the maternal tissues by unintentionally pressing the handle and elevating the blade. The spring under the handle can be easily removed for cleansing. I have used the instrument once. The patient had no febrile reaction.

126 West Forty-fifth Street.

Miscellany.

The late Dr. Agnew.—At a meeting of the Medical Society of the County of New York, held April 23d, Dr. D. B. St. John Roosa offered the following resolutions, which were preceded by a eulogy of the deceased:

Resolved, That the Medical Society of the County of New York, in the death of Cornelius R. Agnew, M. D., LL. D., mourns the loss of one of its most distinguished members, who had by his professional achievements brought honor to his native city and country in every land where medical and surgical science is cultivated.

Resolved, That we bear our testimony to the justness and integrity of a life devoted to his fellows, and to the qualities which have made him, under the most trying circumstances that can occur in the history of a medical organization, one of our most trusted and wise counselors.

Resolved, That the memory of his professional career will ever be an incentive in our endeavor to elevate and maintain a high standard of professional life and character, and that we mourn his loss as that of an exemplar in uprightness and in advancing medical science.

The resolutions were seconded by Dr. E. C. Harwood, and were passed unanimously by a rising vote.

At a recent meeting of the Health Department of the city the following resolutions were passed:

Whereas, It has pleased Almighty God to remove Dr. C. R. Agnew from this life: and

Whereas, The late Dr. C. R. Agnew had endeared himself to all by his disinterested public spirit and his unswerving fidelity to just principles of public health; be it therefore

Resolved, That the death of Dr. C. R. Agnew has deprived the people of this city of a vigilant and wise advocate of its sanitary rights and requirements, and also deprived this department of a conscientious, impartial, and fearless counselor.

Resolved, That these expressions be spread in full on the minutes of this department, and that the president be directed to express to the family of the deceased the sympathy of this department in their sad bereavement.

The Medical and Chirurgical Faculty of Maryland held its ninetieth annual meeting at Baltimore on Tuesday, Wednesday, Thursday, Friday, and Saturday, April 24th, 25th, 26th, 27th, and 28th. The address of the president, Dr. I. E. Atkinson, was on the subject of "Medical Charities." He referred to the various ways in which medical charity was dispensed and expressed the opinion that indiscriminate charity tended to pauperize the recipients. A comparison of the medical charity of Baltimore with that of New York city was not flattering to the former. The fault, he thought, was with the givers rather than with the recipients. The corresponding secretary, Dr. J. T. Smith, then presented his report, which was followed by that of the treasurer, Dr. W. F. A. Kemp, who stated that the finances of the Faculty were not in so satisfactory a condition as it was desirable they should be, although the deficiency that existed last year had been somewhat reduced. In a subsequent report it was announced that the entire sum had been made up by means of voluntary contributions and from the rental of the Faculty's hall in which the pharmaceutical exhibit in connection with the meeting was made. After the reports of the executive committee, the examining board for the western shore, the committee on memoirs and other committees, the chairman of the section in surgery, Dr. Christopher Johnston, Sr., read his report. He referred to the great advances in surgery, but the major portion of the paper was devoted to the consideration of tetanus and erysipelas. In speaking of tetanus he entered somewhat exhaustively into its ætiology, referring particularly to the equine origin of the disease. His conclusions were that it was contagious. The microbic origin of erysipelas was thoroughly considered, as also the different phases and characters of the disease, which he regarded as infectious. The paper was exceedingly interesting, and, although somewhat lengthy, was listened to with much attention. Dr. R. W. Johnston read, as a supplementary report on surgery, a paper on the "Treatment of the Sac in Inguinal Hernia." He favored obliteration of the sac, reviewing the various operations employed for the radical cure of hernia and giving preference to that of Macewen. In the discussion which followed, Dr. J. E. Michael spoke strongly in favor of the use of silver sutures in the closure of the wound, expressing his belief that the cicatricial tissue, in which the wire would become encysted, would add much to the strength of the resulting union. Dr. J. W. Chambers advocated the use of carbolized silk sutures. Dr. Richard Gundry, of the Maryland Hospital for the Insane, read as the annual address a paper on "Some Problems of Mental Action." He considered the effects of inheritance, environment, and individual peculiarities, and cited numerous instances illustrative of the different classes. He spoke particularly of the inhibitory power of the will, if it can be aroused, in restraining particular tendencies, and to a certain extent changing the character of the individual; and of the good effects of muscular exercise in controlling violent tendencies of manner or speech. The address was both interesting and instructive.

The section in practice reported through its chairman, Dr. B. C. Williams, who presented no formal paper. He referred in his remarks to the effect on the *personnel* of the Ninth International Medical Congress through the absence of many distinguished Americans who withdrew from the Congress, which he thought, however, was an era in American medicine. He spoke of the great prevalence of and mortality from measles and pneumonia in Baltimore, and expressed the opinion that the profession of the city should take these diseases into serious consideration and study. He also referred to an existing epidemic of serous diarrhœa which he thought might be due to some atmospheric cause, and it might be looked upon as a foreshadowing of a more serious epidemic during the coming season. He recommended the tincture of yellow jessamine in cases of cerebral congestion and in supra-orbital neuralgia, the remedy to be given in twenty-drop doses every two hours until its toxic effects became apparent as indicated by drooping of the eyelids. Dr. Preston read the formal portion of the report of the section in practice in a paper on "Pericæcal Inflammation." Dr. L. E. Neale, for the chairman of the section in obstetrics, made the section's report in a paper devoted to a consideration of the Cæsarean section *versus* craniotomy in the living child. The sections in Ophthalmology; Psychology; Anatomy, Physiology, and Pathology; and Materia Medica reported through their respective chairmen, and the following volunteer papers were read: "Oxygen as a Therapeutic Agent," by Dr. R. W. Monroe; "Urgent Needs of the Medical Profession," by Dr. J. H. De Wolfe; "Some Thoughts on Bloodletting as a Therapeutic Agent," by Dr. W. Winsey; "A Case of Urethral Stricture with Severe and Unusual Complications," by Dr. C. O'Donovan; "Excision of the Larynx, with the Report of a Case," by Dr. J. H. Branham; "Dietetics in Febrile Diseases," by Dr. H. Saltzer.

The following officers were elected for the ensuing year: President, Dr. John Morris; vice-presidents, Dr. J. E. Michael and Dr. T. B. Evans; recording secretary, Dr. G. Lane Taneyhill; assistant secretary, Dr. Robert T. Wilson; corresponding secretary, Dr. Joseph T. Smith; reporting secretary, Dr. W. B. Canfield; treasurer, Dr. W. F. A. Kemp.

The Missouri State Medical Association held its thirty-first annual meeting at Kansas City on April 17th, 18th, and 19th. The attendance was larger than that at any previous meeting. Among the scientific papers offered was the report of a "Case of Gunshot Wound of the Stomach and Liver," by Dr. H. C. Dalton, of St. Louis, in which laparotomy was performed. The wounds in the stomach were closed by Lembert's suture, and that of the liver was closed by a deep suture of catgut. The patient was fed by the rectum for ten days, and made a good recovery.

Dr. J. P. Parker, of Kansas City, presented an elaborate paper on "Trachoma," which he thinks to be bacterial in origin. He cited Rählmann and others to prove that the so-called follicular conjunctivitis, Egyptian ophthalmia, and trachoma were different grades of the same disease, presenting distinctions in symptomatology. He recommended the anti-bacterial plan of treatment. In some cases he squeezes out the follicles and applies a solution of corrosive sublimate or, if there is considerable catarrhal secretion, nitrate of silver, but if the disease has been of long duration and there is exuberance of papillæ, he thinks there is no remedy worthy of so much confidence as sulphate of copper.

He condemns excision of the retrotarsal folds, as recommended by Galezowski and others.

In cases with pannus, after all other remedies have failed, he applies finely powdered jequirity, but he advises that the cases be selected with care and be under the complete control of the surgeon, with everything favorable to due care of the eye.

Treatment of Lepra of the Eye by the Galvano-cautery.—Secondi ("Rec. d'ophthal.," Aug., 1887) proposes to substitute a compact cicatricial tissue for the leprous granulomata through the medium of cauterization by the galvano-cautery. He excises the granuloma wherever it is possible, and destroys all the spots of corneal infection. He then does an iridectomy as a prophylactic against the intercurrent glaucomatous irido-chorioiditis. The reaction following the cauterization is always very intense, of rapid evolution, and with a tendency to the formation of a compact cicatrix, and the parasitic elements existing in the organism consequently have not time to become incorporated in the cicatricial granulations. The new cicatricial tissue forms a barrier to the plasmatic circulation of the cornea, and thus hinders the spread of the disease.

The Health of Boston.—During the week ending Saturday, April 28th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 26 cases and 7 deaths; scarlet fever, 15 cases and 2 deaths; typhoid fever, 5 cases and 2 deaths; measles, 55 cases and 1 death. There were also 35 deaths from consumption, 22 from pneumonia, 12 from heart disease, 14 from bronchitis, and 4 from marasmus. The total number of deaths was 186, against 191 in the corresponding week last year.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending April 26th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending April 7th corresponded to an annual rate of 19·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 14·8, and the highest in Manchester, viz., 29·7 in a thousand. Small-pox caused 14 deaths in Sheffield, 1 in Halifax, 1 in Leeds, and 1 in Manchester.

London.—One thousand five hundred and ninety-three deaths were registered during the week, including measles, 16; scarlet fever, 20; diphtheria, 16; whooping-cough, 89; enteric fever, 20; diarrhœa and dysentery, 17. The deaths from all causes corresponded to an annual rate of 19·4 in a thousand. In greater London 1,977 deaths were registered, corresponding to an annual rate of 18·7 in a thousand of the population. In the "outer ring" 27 deaths from whooping-cough; scarlet fever, 5; and diphtheria, 8, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending April 7th in the sixteen principal town districts of Ireland was 27·2 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 9·6, and the highest in Drogheda, viz., 46·5 in a thousand. In Dublin 188 deaths were registered, including 4 from whooping-cough; measles, 5; scarlet fever, 3; typhus, 2; and enteric fever, 3.

Scotland.—The deaths registered in eight principal towns during the week ending April 7th corresponded to an annual rate of 21·8 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 11·2, and the highest in Aberdeen, viz., 26·1 in a thousand. The aggregate number of deaths registered from all causes was 551, including 10 from measles; scarlet fever, 3; diphtheria, 4; whooping-cough, 26; fever, 5; and diarrhœa, 3.

Netherlands.—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,129,676, during the month of February, 1888, corresponded to an annual rate of 29·9 in a thousand. The lowest rate was recorded in Dordrecht, viz., 21·5, and the highest in Utrecht, viz., 37·7.

Singapore.—Three hundred and twenty-nine deaths were registered during the month of February, 1888, including 3 from cholera; small-pox, 8; and fever, 89.

Marseilles.—One thousand one hundred and nine deaths were registered during the month of March, 1888, including small-pox, 7; enteric fever, 25; diphtheria and croup, 54; and measles, 34.

Martinique.—The United States consul, under date of April 3d, reports that "from the 15th up to the 31st of March there have been 466 new cases of small-pox at St. Pierre and its environs, and 161 deaths therefrom. At Port de France the disease has almost entirely died out, and here it seems to be diminishing. It still rages in the outlying districts in the country, but I can not get the statistics."

There were 734 cases and 193 deaths reported from March 1st to 15th, inclusive.

Santiago de Cuba.—One death from yellow fever at the military hospital is reported for the week ending April 14, 1888.

Havana.—Seven deaths from yellow fever and 15 from small-pox are reported for the week ending April 14th.

Mortality Table, Foreign Cities.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow	April 7.	545,678	246	..	....	....	....	1	2	1
Warsaw.........	March 31.	439,174	203	..	....	5	....	....	4	4
Amsterdam	March 31.	389,916	176	..	....	....	....	1	1	2
Amsterdam	April 7.	389,916	148	..	..	....	....	....	....	3
Munich	March 31.	275,000	149	..	....	....	....	1	3	4
Edinburgh......	March 31.	262,733	115	..	....	....	....	1	....	4
Palermo	April 7.	250,000	105	..	....	....	....	....	8	3
Belfast..........	March 31.	227,022	183	..	....	....	....	1	....	2
Genoa	April 7.	179,407	96	..	....	4	3	....	....	....
Trieste..........	March 24.	154,500	112	..	...	1	....	...	....	4
Trieste..........	March 31.	154,500	110	..	....	4	....	....	....	1
Stuttgart........	April 7.	125,510	58	..	....	....	....	....	....	....
Bremen..........	March 31.	122,000	43	..	....	...	....	....	1	1
Barmen.........	March 31.	109,000	43	..	....	....	...	....	....	2
Leghorn	April 8.	101,718	56	..	....	....	....	....	....	...
Merida, Yucatan	March 27.	48,832	43	..	....	....	....	2	....	....
Merida, Yucatan	April 3.	48,832	39	..	....	....	....	....	....	....
Cienfuegos	April 9.	40,573	22	..	1	7	....	....	...	....
Gibraltar	April 1.	23,631	11	..	....	....	....	....	....	1
Curaçoa	April 7.	25,000	5	..	....	....	....	....	....	....
Sagua la Grande.	April 7.	15,605	7	.	....	2	....	...	....	....
Antigua	April 1.	15,847	13	..	....	....	....	....	....	....
Cartagena, Cola.	April 7.	13,000	8	..	....	....	....	...	. ..	....
Laguayra	April 7.	7,428	3	..	....	....	....	...	....	....

United States.

Boston, Mass.—Small-pox.—A case of small-pox was admitted to the U. S. marine hospital near Boston, April 26th. The disease was contracted in New York. An additional case was reported in Boston on the same date.

Key West—Small-pox.—Three cases and 1 death are reported for the ten days ending April 14, 1888.

Ship Island Quarantine Station—Small-pox.—The medical officer in charge reports that a new case developed on the 15th instant among the crew of the Norwegian barkentine Professor Lintner, now in quarantine.

The Secretary of the Treasury has issued the following order:

"In accordance with the terms of the act of Congress, dated March 5, 1888, authorizing the selection of an island in the Gulf of Mexico, or in such pass in the Mississippi Delta as may be selected by the Secretary of the Treasury, for quarantine purposes, and the board appointed for the purpose of selecting said site having recommended North Chandeleur Island, it is hereby ordered that so much of said island as may be necessary is hereby set apart for quarantine purposes: *Provided*, That the reservation necessary for the purpose of maintaining a light-house shall not be interfered with."

Sapelo Quarantine Station.—The medical officer in charge reports under date of April 20, 1888, that the American schooner Lillie F. Schmidt, from Charleston, with small-pox on board, has put into Sapelo, and did not therefore go North as she had previously intended.

Portland, Me.—Small-pox.—Two cases of small-pox were reported under date of the 23d instant.

Cape Charles.—Quarantine was opened at this station on the 21st instant.

Florida—Yellow Fever.—The following official reports are published for the information of health officers:

U. S. Marine-Hospital Service,
District of the Gulf,
Port of Key West, Fla., Surgeon's Office, February 10, 1888.

General: I have thought for some weeks that it might be proper for me to make you a personal report in regard to some rumors that cases of yellow fever are occurring upon the main-land. The information coming to me being mainly from local sources, and noticing that the report of Dr. Wylly in the Weekly Abstract of January 20th was rather uncertain, I have hesitated to do so, not wishing to appear as an alarmist.

It seems probable, however, that yellow fever is latent in Florida, and, with the approach of warm weather, danger may be apprehended from its spread northward. Cases of black-vomit are said to have occurred at Sanford, and a lady died a few days ago at Tampa with "acute Bright's disease," while a relative here asserts positively that it was yellow fever. A private letter from Dr. Caldwell states that there will be trouble "when the flowers bloom in the spring"; so that, taking it all together, there seem to be some grounds for apprehension. The weather has not been sufficiently cold to kill out the disease, while some of the local physicians either do not know or do not care to recognize yellow fever when they see it, which adds to the danger of its vivification. Possibly a quiet inspection from Palatka to Manatee, in a month or so by a competent man, would serve to give you the exact condition of affairs in this section before the opening of the regular quarantine season; but I wish to report the current opinion in this quarter, rather than to make any recommendations.

With respect, very sincerely yours,
A. H. Glennan,
P. A. Surgeon, M.-H. S.

Dr. John B. Hamilton,
Surgeon-General, Marine-Hospital Service, Washington.

Plant City, Fla., *March 13, 1888.*

General: There is yellow fever at this place, and evidently at other places in the State, of which due report will be made.

Suppressive measures are being instituted here. The death-rate is low, and cases generally recover in a short time. The greatest desire is held by the health authorities to not have publicity given to the facts in the case, although rumors are spreading rapidly. No panic exists, and the only anxiety is in relation to the news reaching the general public. It is hoped that the press of Florida will not make prominent notice of the state of affairs.

Drs. J. P. Wall, King Wylly, F. H. Caldwell, J. Y. Porter, and others, advise that no public notice be given until a chance is given for complete checking of the fever here where it is most prevalent. In their view I join for many reasons, and trust that your office will consider this confidential.

The stress of duty and temporary loss of my valise prevent me from writing in detail, and from penning a formal letter.

I hope to take the next steamer for Key West.

Frost this morning.

I am, very respectfully, your obedient servant,
R. D. Murray.

Surgeon-General John B. Hamilton,
U. S. Marine-Hospital Service, Washington, D. C.

U. S. Marine-Hospital Service,
District of the Gulf,
Port of Key West, Fla., Surgeon's Office, March 17, 1888.

General: I have the honor to state that, in obedience to M.-H. S. letters Nos. 3079 and 3080 (G. W. S.) of February 16, 1888, I came to this port by way of Florida, and in my passage through the State visited De Funiak, Tallahassee, Jacksonville, St. Augustine, Palatka, Sanford, Apopka, Lakeland, Plant City, and Tampa. Having gained sufficient information, in order to lose no more time I did not visit Kissimmee, Bartow, Dade City, Micanopy, Gainesville, and Manatee, as I wished to. A full investigation would have consumed six weeks, which time I could not consider at my disposal.

That I sought for unfavorable facts and had no right to make my mission known, made it difficult to get prompt information. The rumors of doubtful fevers, and the frost and ninety-day theories, compelled nearly all to be reticent, or, at least, unwilling talkers.

I could get no hint of yellow fever on the line of the railroads through the north end of the State. Some rumors were floating at Sanford of the disease having been at Pensacola during the autumn.

At Jacksonville a continued fever, affecting the highest circle of society *only*, has been prevalent for over two months, resulting in from 6 per cent. to 8 per cent. of deaths, which presents the general characteristics of enteric fever. This name is given by Dr. R. P. Daniel, who has treated most of the cases, and is concurred in by Drs. C. J. Kenworthy, J. D. Fernandez, and A. W. Knight. I fancy that Dr. N. Mitchell considers some of the cases more seriously, and know that Dr. J. C. L'Engle (not a practitioner) holds the idea of a yellow-fever wave overspreading the city.

Similar cases had lately occurred in St. Augustine and Mandarin. In spite of local prejudices and a few unproved charges which arouse suspicion, I think the fever at Jacksonville is enteric, but few doctors in South Florida will join in my opinion.

Dr. J. G. Ames claimed that Palatka had cases of yellow fever in the autumn, but was now free from all suspicion or risk of infection.

Drs. Caldwell and Wylly, at Sanford, insist that the town of Sanford had from 100 to 150 cases in the autumn with 6 deaths, and that mild cases are still occurring as late as my visit—the 6th and 7th—and later, one on the 13th. Georgetown and Mellonville, villages near Sanford, present suspicion. Dr. Herndon bitterly condemns the views of Drs. Wylly and Caldwell, while Dr. Montgomery unwillingly assents to it.

Apopka and the thickly settled region around it seem to be free from all hints of past or recent fever.

No suspicion is thrown upon the Indian River country.

Lakeland, the junction of the South Florida and Florida Southern Railroads, is prostrate, in a business point of view, from the presence of imported cases during last fall, but it was impossible for me to get any clew to recent cases from Drs. Perry, Derio, Marshall, Hart, Preston, and Vineyard.

At Plant City, junction of Florida Railway and Navigation Railroad with South Florida Railroad, twenty-two miles east of Tampa, cases have occurred since October 5th—say, 120 cases and 9 deaths. The last death (the ninth) on March 11th; the last case sickened the same day.

On March 8th Mr. Calhoun convalesced at Box Springs, Talbot County, Ga., from yellow fever engendered during one month's stay in Plant City, he having left for his home about February 27th.

Tampa is declared free from fever by Drs. J. P. Wall and J. A. Jackson, but, as there has been no radical system of cleansing in vogue, the place is by no means above doubt. The lady referred to by Dr. Glennan as dying of acute Bright's disease—*i. e.*, the wife of Dr. Bruce—evidently died of yellow fever about the 20th of January.

At the urgent request of Drs. Wall and Caldwell I disembarked from the steamer Tampa on the night of the 12th, and returned to Plant City to supervise some sort of cleaning up of the town. Many acres of dead wood, brush, and rubbish were cleared off and burned; thorough fumigation of every house in the place was begun; lime and copperas were generally scattered about, and bichloriding of all houses and bedding where sickness had occurred was arranged for. Three days of hard work and inhalation of sulphur and pine smoke gave me a bronchitis from which I still suffer. Micanopy, on the Florida Railway and Navigation Railroad, north of Plant City, and Bartow, south of Lakeland, are presumably danger points at present.

It is evident to me, painful as the idea is, that the lines of railroad from Tampa to Jacksonville are at various points infested by *fomites* which will, at the proper time, give all the trouble prophesied by Dr. Caldwell. The region south of the South Florida Railroad seems to be more secure, except Manatee, but is by no means safe.

I can not think the spasmodic and imperfect cleaning of towns will serve to obviate the recurrence of fever, for there is no power or panic to enforce, or even advise, a general and systematic riddance of all supposable *fomites*, retained air, and niduses. Two weeks' prompt work *now* would minify or avert the danger, but there is no common center of authority or confidence to advise sanitation or to subdue the bitterness of last season's quarantines, follies, and failures.

The Governor will not, it is said, call a meeting of the Legislature. The medical association will not meet till May. The helpless State Health Protective Association is exploded and bankrupt. I wished for privilege to visit more towns to beg for prompt action, but, not caring to ask for it or to take it, will try by private letters to arouse the town authorities to work while some chance offers to avert a summer of terror and death.

I can not see any good to come from a publication of my opinions. Savannah is already warned, and all the chief cities are on the lookout.

Passed Assistant Surgeon Glennan is entitled to much credit for his forethought and courage in informing you of the expected and perhaps inevitable damage to the State.

I am, very respectfully, your obedient servant,

R. D. Murray,
Surgeon.

Surgeon-General John B. Hamilton,
U. S. M.-H. S., Washington, D. C.

Jacksonville, Florida,
April 16, 1888.

Sir: Of course you have known of the existence of yellow fever at Plant City this winter; there have been cases throughout the winter, but it has been only until recently that there has been any alarm, and that occasioned, I presume, by the advent of warm weather. I can not say as to what may be the status of affairs there now, but sent the secretary of my board, Dr. Knight, down to-day, and shall be thoroughly posted by the latter part of the week. I am in somewhat of a quandary as to just what shall be done, providing Dr. Knight reports a prevalence of the disease, as I have no doubt he will. I do not think it advisable and shall not quarantine at present. The lesson of last year taught the many difficulties of quarantining at such a distance. It is my opinion that each infected locality should, by an effective cordon, be isolated. This the counties of Florida can not do, hence, if such a plan is to be adopted, some one with authority and the means for carrying out such requirements as may be deemed best—yourself must take the matter in hand.

I will make a few general statements. Last fall yellow fever probably existed at many points along the lines of the South Florida Railroad and Florida Railway and Navigation Railroad, and may be developed at any of these points later in the season. The State, as you know, has no State board of health, hence every county acts for itself, thus inflicting upon the community quarantines which fail to meet the requirements for various reasons, and destroy commerce. You are familiar with cases of this kind, and I wish your advice as to what should be done. I have made but few statements as to the conditions here, because I know you are already acquainted with them. Any suggestions you may make I shall be happy to receive. Our board represents the most powerful county in the State, and carries great weight. I am anxious that everything possible to avert a spread of the disease shall be done, and if you can suggest some plan our board will try to carry it into effect. I shall write Governor Perry to-night. Pardon this hastily written letter.

Respectfully,
Neal Mitchell, M. D.,
President Duval County Board of Health.

Surgeon-General Hamilton.

[Extract.]

Houston, Tex., *April 8, 1888.*

"I have learned from private sources that yellow fever still exists in Tampa. No mention being made in your weekly abstracts, upon which I greatly rely, I have decided that a direct question to you whether or not such is the case would relieve me of all doubts upon the subject."

R. Rutherford, M. D.,
State Health Officer.

Dr. Knight's report has not yet been sent by Dr. Mitchell, but an interview with Dr. Knight, published in the "Times-Union" of April 25th, states that he found two cases of yellow fever at Plant City, one of which was convalescent and the other likely to prove fatal. The doctor stated that great activity in the carrying out of the sanitary measures was manifest in the towns visited by him.

Bartow.—The municipal authorities deny either that yellow fever is now present, or that there has been any yellow fever at that place.

ANSWERS TO CORRESPONDENTS.

180. For an explicit reply to your inquiry, we would refer you to this Journal for March 24, 1888, p. 334.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE RELATION OF PERFORATING INFLAMMATION OF THE VERMIFORM APPENDIX TO PERITYPHLITIC ABSCESS.

By REGINALD H. FITZ, M. D., Boston,
PROFESSOR OF PATHOLOGICAL ANATOMY IN HARVARD UNIVERSITY, AND VISITING PHYSICIAN TO THE MASSACHUSETTS GENERAL HOSPITAL.

The account of the case of recovery after laparotomy for peritonitis following perforation of the vermiform appendix, recently published by Professor Henry B. Sands, M. D. ("N. Y. Med. Jour.," 1888, xlvii, 197), will be welcomed by all interested in the diagnosis and treatment of the latter affection. Certain of the accompanying remarks, however, are open to criticism. They met with opposition at the meeting of the society before which his paper was read, and the practical importance of the subject makes further consideration seem desirable.

To appreciate Dr. Sands's position it is necessary to understand what he means by perityphlitis. The following are his words (Sands, *op. cit.*, p. 199):

> "I shall use the word perityphlitis in its broader sense, including under that designation all inflammatory processes starting from the cæcum or vermiform appendix which lead to the development of a circumscribed tumor. Cases in which ulceration or gangrene causes a slowly spreading septic peritonitis, as well as those in which acute peritonitis is set up by the direct entrance of fæces into the peritoneal cavity, belong to a separate category, and should be considered by themselves."

Although these two categories comprise "allied disorders," the one is called perityphlitis, the other perforative peritonitis. The author inclines to the view that inflammation of the appendix is the source of the former, and states that its perforation or gangrene is the cause of the latter. It does not appear that he recognizes the weight of the evidence that the severer cases of inflammation of the appendix usually terminate in perforation or gangrene of this organ. Nevertheless, in the "broader sense" of the term, his use of perityphlitis is restricted to cases of inflamed appendix which produce tumors and is excluded from those which result in peritonitis by perforation or gangrene.

Each of his categories comprises two subdivisions. According as the tumor is inflammatory or an abscess, so are there two varieties of perityphlitis. Their clinical course is so alike that, at an early period, a mechanical exploration offers the only means of distinction. "The lapse of a week is generally required before the diagnosis in this respect begins to clear up." Nothing is said with regard to the relation of the inflammatory tumor to the peritonæum, but we are told that the abscess is extraperitoneal.

It is maintained that, for practical purposes, it is important to determine that the perityphlitic abscess is outside the peritonæum. But it is stated as irrelevant to the discussion to consider "whether, in the very beginning, such abscesses are sometimes intraperitoneal." Those who oppose his views in this matter, on the contrary, are deeply interested in knowing whether most of the abscesses from an inflamed appendix are not intraperitoneal at the outset, and believe it unwise to wait long enough to permit them to become extraperitoneal.

Their position may be stated somewhat as follows: The abscess from an inflamed appendix is almost invariably the result of its perforation or gangrene. The exceptional cases are so isolated that they are most rationally regarded as due to errors or deficiency of observation. If, then, the perityphlitic abscess, so called, is the result of the same anatomical condition as the acute or subacute perforating peritonitis, and the appendix usually lies free in the peritoneal cavity, it is probable that the abscess resulting from its perforation or gangrene will lie in the same cavity. These views have been very ably presented by Weir (N. Y. "Med. Rec.," 1887, xxxi, 652).

Dr. Sands has been unable to find any evidence concerning the intraperitoneal seat of the abscess in the writings of With and Fitz. I am familiar only with the abstract of the paper by the former ("London Med. Rec.," 1880, viii, 213), and am unable to speak definitely concerning his sources of information. In my paper ("Trans. of the Assoc. of Am. Phys.," i, 1886, 107; "Am. Jour. of the Med. Sci.," xcii, 1886, 321) the evidence was furnished by post-mortem examinations conducted by myself, and the analysis of the detailed reports of two hundred and fifty-seven cases of demonstrated perforating appendicitis. The facts thus obtained were compared with those derived from the study of two hundred and nine cases of so-called typhlitis and perityphlitis. In the latter series there was no actual demonstration of the primary seat of the disease. The comparison of the results suggested in the most striking manner that these affections were not simply allied, but were identical.

From the position assumed by Dr. Sands it is obvious that he requires the evidence for the conclusion that the resulting abscesses early in the disease are, as a rule, intraperitoneal. His own experience will satisfy him of the truth of the statement that "the more protracted the course of the disease, the greater is the probability of the destruction of the peritonæum forming the wall of the abscess. With the perforation of the parietal peritonæum may occur extensive necrosis, purulent and fæcal infiltration of the abdominal walls" ("Trans. of the Assoc. of Am. Phys.," i, 1886, 117).

Case II of his table ("Annals of the Anat. and Surg. Soc.," ii, 1880, 267) states: "Case not seen until late. Integument extensively undermined." Case VI, "Incision at the end of third week. . . . Tumor much higher than usual." Case XIV, "Tumor suddenly collapsed on ninth day; abscess probably ruptured into bladder." Case XVI, "Incision by Dr. Stimson down to subperitoneal fat; no abscess discovered. . . . Patient became worse after operation, until, eleven days afterward, abscess broke into wound, affording immediate relief." Case XX, "Tumor in iliac fossa, fluctuating at outer margin of rectus. Incision on twelfth day." Case XXIII, "On ninth day abscess burst into intestine."

It is not even necessary to consult Dr. Sands's experience previous to 1880 for an illustration of the eventual destruction of the parietal peritonæum by the abscess. In October, 1887 (" N. Y. Med. Jour.," *loc. cit.*, p. 203):

> "After the usual incision, . . . the peritonæum was found to be lying upon the wall of the abscess, over which it could be freely slid, whereupon I abandoned further operation. . . . At the time of the operation the man was very ill, and I feared he might die unrelieved. Forty-three hours later, however, the abscess ruptured into the wound, and he afterward made a speedy recovery. Last December I operated in the same manner. . . . In this case the abscess did not break into the wound until thirty-nine days after the operation."

It is gratifying, under these circumstances, to learn that "no harm came from the delay beyond the postponement of the desired relief."

If the abdominal cavity is examined during the first week of a fatal case of inflamed appendix, there is almost invariably found a purulent peritonitis, circumscribed or diffuse, or both. If sharply circumscribed, the condition is commonly called a perityphlitic abscess. The pus usually lies within the peritoneal cavity; the walls of the abscess are formed by adhesions between the parietal and the visceral peritonæum. The canal of the appendix generally communicates with the cavity of the abscess by a perforation of the former. There is rarely any evidence of pus in the subperitoneal connective tissue.

The following abstracts from my notes will illustrate these statements:

Death on the Second Day.—Fitz. Small intestines in pelvis and right iliac fossa matted together by recent fibrinous adhesions. Pus in pelvis. Appendix perforated.

Death on the Third Day.—Meigs (" Phila. Med. Times," iv, 1873–'74, 675). Appendix perforated; center of a large abscess limited by adhesions, but which had recently burst into genereal peritoneal cavity.

Death on the Fourth Day.—Fitz. Appendix perforated, apparently surrounded by omentum. Intestines glued together; adhesions firmest in right iliac fossa.

Loomis (N. Y. " Med. Record," viii, 1873, 378). Wall of abscess in left iliac fossa formed by omentum, cæcum, bladder, rectum, and abdominal wall. Perforated appendix entered abscess cavity, which contained sources of offensive pus.

Death on the Sixth Day.—Gobrecht (" Trans. of the Coll. of Phys. of Philadelphia," N. S. ii, 1853–'56, 511). Rectal *cul-de-sac* shut off by agglutinated sigmoid flexure, small intestines, and fundus of bladder, forming an abscess containing more than a teacupful of pus. Appendix perforated.

Elliot (" N. Y. Jour. of Med.," 3d s., v, 1858, 332). Seropurulent fluid escaping from a cavity in right lumbar region formed by peritoneal adhesions. Appendix perforated.

Fitz. Perforated appendix and circumscribed peritonitis.

Death on the Seventh Day.—Fitz. Omentum spread smoothly over coils of small intestine, adherent to them and anterior abdominal wall by easily separable fibrinous adhesions. In pelvis a sero-purulent, rather thick fluid. Perforated appendix adherent to pelvic wall. No perityphlitis. (1877.)

Hallowell (" Am. Jour. of the Med. Sci.," xxii, 1838, 127). Cæcum adherent to posterior wall of bladder, to peritonæum lining internal iliac muscle, and to rectum. All matted together, and forming the tumor felt through the parietes during life. Appendix adherent to anterior and lower surface of cæcum.

Burne (" Med.-chir. Trans.," xxii, 1839, 49). Sigmoid flexure and coils of small intestine adherent to each other and to cæcum, the lower and outer surfaces of which were adherent to corresponding abdominal parietes. Perforated appendix under outer half of cæcum.

The following are some of the notes relating to the condition of the parts in question during periods later than the first week:

Death on the Eighth Day.—Soule (" Pacific Med. and Surg. Jour.," x, 1867–'68, 115). Eight to ten ounces of thick, creamy pus hemmed in by inflammatory adhesions in right lumbar and inguinal regions. Appendix gangrenous.

Death on the Twelfth or Thirteenth Day.—Burne (" Med.-chir. Trans.," xxii, 1839, 55). Peritoneal abscess, size of egg, outer and under side of colon. Walled in by adhesions of the outer part of the ascending colon to the corresponding portion of the lateral parietes of the abdomen. The ascending colon forms the anterior and inner wall of the abscess. Perforated appendix opened into the abscess.

Beach (" N. Y. Med. Jour.," xiv, 1871, 397). Abscess between adherent cæcum, ileum, and appendix. Latter perforated.

Death on the Fifteenth or Sixteenth Day.—Fitz. The incision for a perityphlitic abscess, made along Poupart's ligament, entered a circumscribed abscess in the vicinity of the anterior superior spine of the ilium. This communicated with the general peritoneal cavity through the soft, yellow adhesions which united portions of the ileum to the anterior wall of the upper part of the cæcum and to the abdominal wall. The cavity thus opened communicated, by a minute hole between adherent coils of intestine (the ileum), with another (pelvic) abscess described below. On opening the abdomen by the central incision. the intestines were found adherent to each other and to the abdominal wall by rather firm fibrinous adhesions, which were easily torn. The peritonæum in general was thickened and opaque, with abundant fibrinous false membrane. Several of the lowermost coils of the ileum adhered firmly to each other, to the rectum, cæcum, bladder, and pelvic wall. A circumscribed cavity was thus formed, with a wall of thickened, dense, and somewhat trabeculated tissue, of a bluish slate-color. Its contents were composed of a little gas, and some ounces of fœtid, dirty-gray, opaque fluid. In addition were found some three inches of the detached, thin, flattened, discolored, partly macerated vermiform appendix, and a fæcal concretion, partly calcified, as large as a pea. The stump of the appendix, half an inch long, adhered to the brim of the pelvis, and its cavity opened freely into that just described.

Death on the Eighteenth Day.—Peacock (" Trans. of the Lond. Path. Soc.," xx, 1870, 182). Firm adhesions between cæcum, ileum, and parietal peritonæum surrounding a large cavity filled with much offensive pus. Cavity extended into pelvis; but fibrous tissue external to peritonæum free from disease. Perforated appendix surrounded by abscess.

Death on the Twenty-fifth Day.—Traube (" Berl. klin. Woch.," vi, 3, 1869). Abscess in right iliac fossa, of the size of a fist, bounded behind by the psoas and iliacus, in front by coils of intestine. Appendix ulcerated and perforated.

Death in the Fourth Week.—Fitz. In right lumbar region several coils of small intestine were adherent to the mesocolon by recent adhesions. In detaching these, a recent, circumscribed purulent peritonitis was observed, the cavity containing half an ounce of pus. Appendix almost wholly destroyed.

Death after Some Weeks.—Joffroy (" Bull. de la soc. anat.," xliv, 1869, 512). Circumscribed purulent peritonitis in right flank and iliac fossa. Perforated appendix contained a pin. Peritonitis about appendix not affecting wall of right iliac fossa.

Death in the Eighth Week.—Fitz. The appendix lay behind a loop of the ileum, given off just above the valve, which was quite firmly adherent to the peritonæum of the right iliac fossa and to the posterior wall of the pelvis. A circumscribed abscess, long and flat, holding perhaps an ounce, was found between the intestinal loop and the parietal peritonæum. The canal of the appendix communicated directly with the cavity of the abscess, the lower end of the former being detached and separated by an interval of half an inch; the detached portion firmly adherent to the abscess wall. The wall of the appendix was thickened and dense, constricted at its upper part. Above the constriction was a dilatation, with an ulcer of the mucous membrane as large as the thumb-nail, through which a perforation into the abscess-cavity, one fourth of an inch in diameter, had taken place.

Fitz. Appendix adherent to mesentery by recent adhesions and perforated. Minute abscess as large as a pea. Portal thrombosis and multiple hepatic abscesses.

Death at end of a Year.—Parrott ("Bull. de la soc. anat.," xxx, 1855, 54). Three attacks. Abscess incised during the third attack; considerable quantity of bloody pus escaped. Fistulous tract remained, and a year later a pin was extracted from it. Eleven days later, death. Cavity, of the size of a large nut, between perforated appendix and omentum, communicated with the fistula and abdominal cavity.

Within the past few years the evidence that the early stage of the so-called perityphlitic abscess is a circumscribed peritonitis, and that the abscess, when first seen, is intraperitoneal, is, fortunately, being furnished by surgical operations as well as by post-mortem examinations.

Laparotomy at end of the Second Day.—Sands ("N. Y. Med. Jour.," xlvii, 1888, 197). Limited peritonitis affecting parietal peritonæum and that of commencement of the large and adjacent coils of the small intestine, which were covered with pus and recent lymph. Appendix perforated. Recovery.

Laparotomy on the Third Day.—Krönlein ("Arch. f. klin. Chir.," xxxiii, 1886, 514). Omentum, adherent to intestines and parietal peritonæum in right iliac fossa, covered a great quantity of pus which extended into the pelvis. Appendix perforated. Death.

Bryant (N. Y. "Med. Record," xxxi, 1887, 22). Signs of inflammation more intense in right iliac fossa than elsewhere. Appendix perforated. Death.

Lateral Incision on the Fourth Day.—Cabot (unpublished case). Peritonæum raised; incised; drainage; death. At autopsy, coils of ileum adherent to each other and to ascending colon, which adhered to lower edge of liver and abdominal wall. Appendix gangrenous, not perforated.

Laparotomy on the Fifth Day.—Barlow and Godlee ("Med. Times and Gaz.," 1885, ii, 852). Early general peritonitis and lymph in vicinity of cæcum surrounding a collection of fœtid pus. Appendix thickened. Recovery.

Weir (N. Y. "Med. Record," xxxi, 1887, 655). Abscess at brim of pelvis contained five to six ounces of pus. Appendix perforated. Recovery.

Lateral Incision on the Fifth Day.—Keen ("Med. and Surg. Reporter," liv, 1886, 165). Obscure tumor opened and found to contain nearly a pint of pus. Recovery. (This case is included to show what the contents of the perityphlitic tumor may be in the first week; not as evidence of the intraperitoneal seat of the abscess.)

Laparotomy on the Sixth Day.—Homans ("Boston Med. and Surg. Jour.," cxiv, 1886, 388). Beneath the healthy bowel were found the adherent intestines, which were separated and the abscess emptied. Recovery.

Cabot (Surg. Rec., Mass. Gen. Hosp., MSS., 1886). Exploration with the fingers opened an abscess in the right iliac fossa, from which a considerable quantity of foul-smelling pus was evacuated. Death. The autopsy showed a cavity shut off by adhesions between the omentum, intestines, liver, and ascending colon. Appendix perforated.

Laparotomy on the Seventh Day.—Elliot ("Boston Med. and Surg. Jour.," cxviii, 1888, 92). Abscess at brim of pelvis, circumscribed by adherent intestines; two to three ounces of pus removed. Recovery.

Bontecou ("Jour. of the Am. Med. Assoc.," x, 1888, p. 106). A pus cavity extended into the pelvis, but appeared to be walled in by adherent intestine at the upper and inner border. The contents were pus and fæces. The symptoms suggested an appendicular source, and aspiration showed pus. Recovery took place.

Lateral Incision on the Eighth Day.—Richardson ("Boston Med. and Surg. Jour.," cxviii, 1887, 88). Peritonæum raised from right iliac fossa, punctured, opening enlarged. Eight ounces of fœtid pus evacuated from the tumor. Recovery.

Vickery ("Boston Med. and Surg. Jour.," cxviii, 1888, 40). Operation by Harrington. Peritonæum of right iliac fossa raised; aspirated with negative result, although a slight tender swelling was felt high up by the finger in the rectum. Abscess burst into the rectum on the thirtieth day. Recovery.

Laparotomy on the Twelfth Day.—Harrington (MSS. notes). Adherent intestines covered a large abscess in right iliac fossa extending into the pelvis. Fœtid pus. Death.

The evidence above given is of the sort which led the writer to maintain that in cases of so-called perityphlitis and perityphlitic abscess there was present during the first week a circumscribed peritonitis of greater or less extent. The adhesions which limit the process are soft or firm. When firm they are more likely to suggest a tumor; when soft, a tumefaction, since the tension of the inclosed product is likely to be greater in the former than in the latter instance. There is rarely any evidence at this period of the extraperitoneal abscess as defined by Sands. The possibility of its occasional occurrence is admitted.

The seat of the appendicular abscesses during the second week is again a question of fact to be decided rather by post-mortem examinations than by surgical operations, especially if the latter consist in an external wound of two inches, which grows narrower as it increases in depth, the opening into the abscess not being larger than will readily admit the forefinger (Sands, "Annals," *loc. cit.*, p. 261). The positive evidence on record is cumulative with reference to the usual intraperitoneal seat of the abscess during the second week. Those who assume the contrary are called upon to present the evidence, above criticism, in proof of their position.

Should it appear that all abscesses of appendicular origin, opened in the second week, were extraperitoneal, this fact would not militate against the probability, derived from such evidence as is herein given, that most of these abscesses were intraperitoneal during the first week. As two thirds of the collected fatal cases of inflamed appendix, under whatever term they may have been designated, proved fatal during the first eight days, the only chance for the patients' lives would have been in an operation during the first week. Since one half of them died in the latter half of this week, it is evident that an operation to have saved life must have been performed during the first half of the first week.

The disagreement between Dr. Sands and those with whom he differs is not so extreme as may be supposed. It relates essentially to the time of operating for relief. He believes with them that an early operation is imperative in cases of peritonitis from perforation or gangrene of the appendix, when no tumor is to be made out. If he will inquire into the condition of the appendix when a tumor is present, he will find, almost invariably, that it is perforated or gangrenous, provided he can obtain satisfactory evidence of its condition. Since he favors the early operation in the perforative peritonitis without the tumor, he must eventually advocate the same operation when he is convinced that the tumor as well as the tumefaction is evidence of a perforative peritonitis.

It is the duty of every physician to be mindful that, for all practical purposes, typhlitis, perityphlitis, perityphlitic tumor, and perityphlitic abscess mean inflammation of the vermiform appendix; that the chief danger of this affection is perforation; that perforation in the great majority of cases produces a circumscribed, suppurative peritonitis, tending to become generalized; that, in the light of our present knowledge, the surgical treatment of this lesion offers the best chances for the life and future health of the patient, and that the progress of the disease needs to be watched with knife in hand.

THE USE OF THE DILATOR AND INTRA-UTERINE STEM IN THE TREATMENT OF DYSMENORRHŒA AND STERILITY

(RAPID DILATATION).*

BY AUGUSTIN H. GOELET, M. D.,
NEW YORK.

IT is the purpose of this paper to show that dilatation, if maintained, is a safe, satisfactory, and reliable substitute for all the cutting operations upon the cervix heretofore used to overcome stenosis, obstruction, and flexion of the cervical canal, and at the same time to show that it is entirely free from the dangers and objections urged against these operations. But do not confound this operation with divulsion, which is to be classed in the same category with division and discission, and which with them should be denounced as barbarous mutilation.

Perhaps, for a better understanding of the terms, it will be well to say here that by division is meant Sims's posterior incision of the whole structure of the cervix up to the vaginal junction, which includes the tissues at the internal os to a considerable extent, and sometimes the fibers anteriorly. Discission is deep incision of the whole cervical canal in several directions, including both the external and internal os. And by divulsion we mean forcible rupture of the fibers of the cervix, usually with scarification of the constricting fibers in every direction, and a consequent tearing and lacerating of the tissues, the latter being a favorite with a prominent specialist in New York, who uses an instrument which he says must be capable of exerting a pressure of two hundred pounds. Should we consider this a justifiable procedure? It is plainly the surgeon's duty always to imitate or restore nature, but never to deface her; nor is he justified in submitting his patient to any more risk than is actually necessary to accomplish the result aimed at.

These operations are extremely apt to be followed by disastrous consequences, either immediate or secondary, and, being unnecessary, should be stricken from all works on diseases of women. It is really astonishing that they still have advocates, who appear to be blind to their dangers and failures, when there is a better, safer, more natural, and perfectly satisfactory operation in dilatation. If immediate and permanent relief follows properly performed dilatation, where exists the necessity or even the excuse for these more dangerous methods? When such a rash and unjustifiable procedure as divulsion is described synonymously with dilatation by most writers upon this subject, it is not strange that we find some who object to rapid dilatation in any form. They say "we fear the dilator; it is a dangerous instrument." I grant it is, in careless hands. So is the razor; but it is a necessity. Should we condemn an instrument because some have gone too far and abused it?

If the dilator is used as I have advised and urged, with extreme care and with just enough force to accomplish a moderate amount of dilatation, the process will be only an imitation of nature, and entirely devoid of danger. It was intended that the cervical canal should dilate. It is what takes place in labor; it is what takes place in abortion; and, although to a lesser degree, the same thing occurs at every menstrual epoch. This mild dilatation, however, would be insufficient in many cases, indeed in most cases, unless something were done to maintain it. For this purpose I have devised this little instrument, which I call an intra-uterine stem.

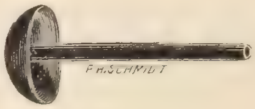


FIG. 1.

It is only two inches long, while the virgin uterus is two inches and a half, and is perforated through its center with a considerable-sized channel, which allows free drainage from the uterine cavity while it is in position. It terminates in a cup-shaped shoulder which prevents further entrance, and, by fitting the cervix nicely, the suction produced aids in its retention.

This is introduced after the dilatation is complete, and retained in position by a cotton tampon. It is retained usually about a week, the patient meanwhile being confined to bed. There are three sizes, 10, 12, and 14 of the English scale. The first size is used for the first twenty-four or forty-eight hours, then it is replaced by No. 12, and again in a day or two there will be enough relaxation to allow the introduction of No. 14.

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* Read before the Medical Society of the State of North Carolina at its thirty-fifth annual meeting.

The advantage and importance—nay, the actual necessity—for the use of the stem in the treatment of these cases is evident to any one who will give the matter serious thought. The resilience of rubber (the most resilient of all substances) may be overcome by constant stretching. But it would be a tedious process to overcome the resilience of a piece of rubber tubing at a given point by repeated interrupted stretchings, as compared with a lesser force constantly applied. As an illustration, one end of this little piece of rubber tubing has been stretched over a hard substance which is larger than its caliber, and has been left there until it has lost its resilience in part and assumed the size and shape of the body over which it has been stretched. This is permanent because its power of resistance has been overcome by a force constantly applied.

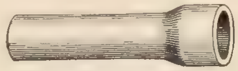

Fig. 2.

The stem placed in the cervix after it has been dilated prevents recontraction by exerting a constant pressure upon the constricting fibers. During the first twenty-four or forty-eight hours the stem will be grasped firmly by the cervix; but later relaxation occurs, and a larger size can be introduced, which could not have been done at first without carrying the dilatation further. Can there now be any doubt of the necessity for the stem?

Dr. John Ball, of Brooklyn, ten years ago, in a paper read before the Medical Society of the State of New York, recognized the necessity of a stem to maintain the result gained by the dilator. But his stem was a rude affair, impracticable and dangerous, because it allowed forces operating outside of the body to act directly upon the uterus; besides, it plugged the canal and prevented drainage; and it was abandoned. Another stem has been devised, which is two inches and a half long, curved, and grooved on the side for drainage, but the collapse of the mucous membrane into the groove stops it up and defeats its object. It is used only by its originator for flexions and as a drainage-tube.

To those who object to the stem as dangerous I would say that at one time they did not hesitate to use a sponge or laminaria tent, which blocks the canal, prevents drainage, and provokes constant irritation by its expansive power as long as it is retained. The stem is absolutely clean, allows free drainage, and provokes no irritation if the patient is kept quiet. In an experience of over three hundred cases, I have yet to see one objectionable symptom follow its use.

I first advocated the use of the stem after dilatation in a letter to the "Medical News" of November 15, 1884, page 558. And again in an article of considerable length in the same journal of April 18, 1885, page 431, and gave illustrative cases. In March, 1886, I read a paper on this subject before the Section in Obstetrics and Diseases of Women and Children of the New York Academy of Medicine, which appeared in the "Medical News" of April 3, 1886, page 375. I may appear persistent, but there are some whom I have not yet convinced of the correctness of my principle.

Indications for the Stem.—1. The stem is used after dilatation for stenosis to maintain the dilatation and prevent immediate recontraction, which is sure to follow if it is not used.

2. To splint up a flexed uterus after it has been straightened and the flexion overcome by the dilator.

3. To permanently remove obstructions due to hypertrophy or inflammatory thickening, and the consequent hyperæsthesia of the lining membrane of the canal, which it does by the constant pressure it exerts while in position.

4. To secure free drainage from the uterine cavity.

By far the most important indication for the use of the dilator and the stem is to secure free drainage from the uterine cavity of the normal secretions, and of the increased secretions of disease, such as uterine catarrh or leucorrhœa, and thus to forestall and prevent diseases of the Falloppian tubes and ovaries. Remember that every month a woman has a congestion of the pelvis and generative organs which Nature has intended to be relieved by a free flow of menstrual blood. If this flow is natural and escapes freely, the congestion is relieved, and she is better for having properly performed one of her natural functions. If, however, there is any obstruction to this flow at the cervical canal, it accumulates and distends the uterine cavity until the organ resists and contracts to expel it. Repeated efforts on the part of the uterus finally overcome the obstruction temporarily; but such an unnatural and imperfect menstruation tends to continue the congestion rather than relieve it, and, sooner or later, pelvic pain, leucorrhœa, and backache will be manifested as an evidence of this condition. Disastrous consequences are easy to infer after years of such periodically unrelieved congestions.

A uterine catarrh or leucorrhœa produced by congestion consequent upon obstruction of the cervical canal calls unmistakably for dilatation and the subsequent use of the stem to remove the hypertrophy of the canal which is the barrier to free drainage. These discharges, being dammed back, distend the uterine cavity, and are forced back into the tubes, producing inflammations there (such as salpingitis), and sometimes escaping into the peritoneal cavity, producing septic peritonitis. The origin of a great many pelvic troubles, often thought obscure, may be traced to this condition of the cervical canal. The remedy is dilatation maintained, and lifting of the heavy, congested uterus to its proper place in the pelvis by a well-adjusted pessary as soon after the operation as it can be borne.

There is urgent necessity for investigating such symptoms as leucorrhœa and painful menstruation when they first occur in young girls before they produce structural changes in the pelvic organs. Especially is this necessary before marriage, because these conditions are always aggravated after marriage unless immediately relieved by pregnancy. And if this remedy is delayed too long the inflammation will have already extended to the Falloppian tubes and ovaries, and conception is impossible. Any mother who neglects a daughter complaining of these symptoms has no one to blame but herself if she develops a tumor or ovarian or tubal disease which can only be cured by removal of the diseased structures.

When dysmenorrhœa is associated with stenosis or acute flexion, the indication for dilatation is evident, but when the os is apparently patulous it is not always an easy matter for one of limited experience to determine just when there is enough obstruction in the canal to demand it. If dysmenorrhœa exists in either a married or an unmarried woman, and there is a discharge from the os, which is eroded, and the passage of the sound through the internal os gives pain, even if there appears to be no obstruction, there will be enough inflammatory hypertrophy of the lining membrane of the canal to produce obstruction and hyperæsthesia when it is congested for menstruation, and dilatation should be done. If it has existed long enough to produce tenderness in the ovarian regions, with thickening and enlargement, there is less danger in the operation than in the neglect of free drainage for the discharge.

The Operation.—The Sims position and speculum are imperative in doing this operation, especially where there is flexion. And an anæsthetic is essential, because it produces relaxation, and because the operator can work less hurriedly and with greater care when there is no apprehension of giving pain, to say nothing of the suffering saved the patient. Dilatation should never be done at the office and the patient sent home.

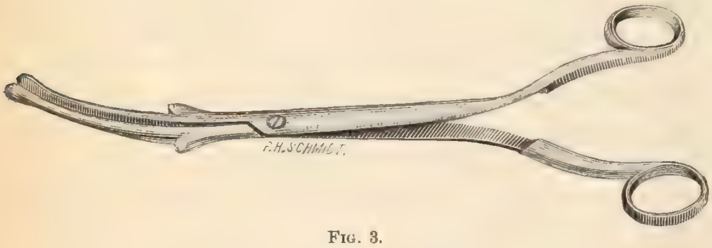

FIG. 3.

The dilator shown here is a modification of the Palmer instrument. The blades are made stouter and broader on their lateral surfaces to prevent digging into the tissues, and the shoulder has been made more abrupt. The thumbscrew attachment has been removed. Any instrument capable of exerting more power than this should never be used.

I never use force in introducing the dilator. If the canal will not admit the beak after gentle manipulation (which is not always the case), I use successive sizes of conical cervical bougies (Hanks's), commencing with the size which the canal will admit without force, and when a No. 11 can be passed the dilator will enter freely. The cervix is seized with an angular tenaculum, which allows more room than a straight one and does not tear out, and is steadied while the dilatation is done without using the screw attachment on the handles; because, should the instrument slip backward (which it is very prone to do), the tissues would be lacerated before the pressure could be removed. When the dilatation has been carried as far as appears necessary (and there is no rule to govern this, for the amount varies with each case), the instrument is removed, and larger sizes of cervical bougies, from Nos. 13 to 16 or 18, are passed successively to insure the completeness of the dilatation, and to prepare the way for the stem.

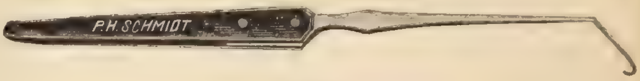

FIG. 4.

In introducing the stem, the angular tenaculum, which is here shown, is actually necessary to secure a proper direction of the stem, as, with the straight tenaculum, the cup shoulder of the stem impinges against its shank, and deflects the point of the stem from its course before it has entered the internal os (which is the important point), and pressure upon it while the cervix is fixed with the tenaculum pouches the canal in front of the internal os, and the traction upon the cervix elongates or stretches it until it reaches the cup shoulder, and gives the appearance to the stem of being up in position when it is not. A failure will be the result unless this is detected.

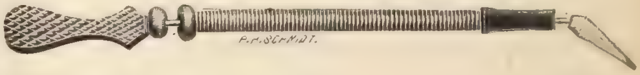

FIG. 5.

The applicator shown is also very necessary in introducing a straight stem, as the curve near the point allows the stem to pass the internal os with more ease, and the sliding spiral on the shank may be moved with the thumb, and the stem, when in position, may be pushed off the bulbous point which holds it during introduction. The stem is removed every day, cleansed and replaced, and is used for one week. The patient may get up on the day after its final removal.

Too much must not be expected of the operation alone. Subsequent treatment is frequently necessary to relieve existing conditions dependent upon the cervical obstruction. Mild cases, treated early, may need little or no attention after the removal of the cause; but in cases of long standing, with inflammatory complications resulting, appropriate treatment is necessary to effect a complete cure, and the operation must be looked upon as an initial step in this treatment. Failures after this operation may be traced to a neglect of this precaution. If treatment is discontinued as soon as the actual dysmenorrhœa is relieved, and the pelvic pain and uterine catarrh due to congestion or inflammatory changes are allowed to go on, while they may or may not cause the patient much annoyance, they are often sufficient to prevent conception.

It is best to use a well-adjusted pessary after these operations (where there is nothing to contra-indicate it) to lift the uterus to its original place in the pelvis, which will aid materially in relieving congestion.

I will append a few cases selected from my case-book to show the different conditions for which this operation is appropriate and effectual.

The first five cases are illustrations of primary or congenital stenosis:

Case I. *Stenosis of both External and Internal Os.*—Mrs. Emily H., widow, aged thirty-five years, commenced to menstruate when eighteen years old, with great pain from the first. She was married when twenty-one years old, and was married for about three years without conceiving. Her dysmenorrhœa was very much aggravated, and in addition she suffered with severe pelvic pain, leucorrhœa, and backache. Examination showed both external and internal os very small, the probe causing sharp pain as it passed the internal os. Dilatation was done under ether, June 14, 1886, and the stem used for one week. She has never suffered any pain with menstruation since, and is entirely well.

Case II. *Stenosis with Pin-hole Os.*—Miss E., aged nineteen years, suffered with dysmenorrhœa since puberty at fourteen years, and it finally became so intense as to be unbearable. A very small cervix was found with pin-hole os and the small uterine probe was passed with difficulty, causing great pain. Dilatation was done under ether, October 23, 1884. Her subsequent menstruations were free from pain, and six months after the sound could be passed with ease.

Case III. *Stenosis at the Internal Os.*—Mrs. M., aged thirty-three years, married ten years, has suffered with dysmenorrhœa since puberty, which was very early. Although her suffering was severe before marriage, it was bearable; but afterward it became so much worse as to render her life one of constant misery. The anticipation and dread of the next period rendered her almost a monomaniac upon the subject during the interval. She had previously sought relief in Edinburgh, London, and New York, and persistently refused to allow the knife to be used. No other remedy was offered her. She was sent to me by Dr. Wakefield, of Jacksonville, Fla., after seeing my first paper on this subject. He stated that he had been obliged to use morphine hypodermically to relieve her suffering, and as this lost its effect he had been frequently obliged to resort to chloroform inhalation to relieve convulsive attacks produced by the severe pain. She was operated upon under ether, May 25, 1885. There was marked stenosis of the internal os. Her dysmenorrhœa has been completely and permanently relieved. Dr. Wakefield wrote me only a few months since that she was in excellent health, and had had no return of the pain.

Case IV. *Stenosis after Persistent Treatment with Sponge Tents.*—Miss Virginia G., aged thirty-five years, commenced to menstruate when thirteen years old with severe pain, which lasted as long as the flow. Every succeeding menstruation was attended with pain of the same character. When eighteen, she lifted something and felt that she had hurt herself. At the next period the pain was very much more severe. Eight years previous to consulting me she was treated with sponge tents every month for four or five months with some temporary relief. When the treatment was discontinued, the pain became as severe as before. The treatment by tents was recommenced and continued for two years and a retroflexion pessary used. For a year previous to seeing me she had no treatment, and her dysmenorrhœa was as bad as ever.

Examination revealed a retroflexed uterus with a pin-hole os, which would only admit a small uterine probe. The same probe passed the internal os with considerable difficulty and caused severe pain. Dilatation was done under ether, April 5, 1887. The introduction of the dilator was out of the question until successive sizes of uterine bougies had been passed to prepare the way. The tissues were rigid and dense and the dilatation was difficult, but was carried to a point where a No. 10 bougie could be passed. Twelve months have elapsed and she has never since experienced the least pain during menstruation, and an ordinary-sized sound can now be passed freely and without giving pain. She has worn a pessary since the operation.

Case V. *Stenosis associated with Epilepsy.*—Miss K., aged eighteen years, commenced to have epileptic spasms when about twelve years old. Her menstruation appeared scantily and with much pain two years later, and with it the epileptic attacks increased in frequency. She had noticed that the attacks were more apt to occur just before and just after menstruation, which was still scanty. Examination showed an undeveloped uterus (only two inches) with marked stenosis. Pelvic contents normal in other respects. Dilatation done under chloroform, February 7, 1887. She had two slight attacks while wearing the stem—the first the day following the operation and the next on the third day—but none after. Her next period was free from pain, normal in quantity, and there was no return of the epileptic attacks. More than a year has now elapsed, and she is enjoying excellent health still.

The next two cases will illustrate secondary or acquired stenosis:

Case VI. *Extreme Stenosis following Miscarriage.*—Mrs. E. S., aged twenty-seven years, married ten years, has menstruated since she was ten years old without pain until after having a miscarriage at five months, when one year married. After this she suffered with severe and constantly increasing dysmenorrhœa, and never became pregnant again. For a year previous to the operation she had convulsions at every menstrual period, until the flow became freely established. Examination showed the uterus in normal position, but it was actually impossible to pass the probe through the internal os. The uterus was sensitive and enlarged. Dilatation was done under ether November 16, 1885, and great difficulty was experienced in introducing the dilator. In fact, it could not be done until a cotton-wrapped flexible applicator was first forced through. The cervix was so rigid and tough that it sprung the blades of the dilator, and it was difficult at first to introduce a No. 10 stem, which was grasped by the cervix as in a vise. In four days, however, a No. 14 stem was introduced with perfect ease. She has menstruated since without any pain whatever, and no convulsions. One year after the operation I could pass the sound or an applicator wrapped with cotton with perfect ease and without giving pain. There had then been no return of the dysmenorrhœa.

Case VII. *Stenosis from Cicatricial Contraction following Division of the Cervix.*—Mrs. N., aged forty, married twice, with one child fourteen years old. She was treated by Dr. Emmet when first married, and her pregnancy was the result. She suffered no dysmenorrhœa at that time. It developed subsequent to the birth of her child, and in 1882 she was treated by a distinguished physician of Washington, D. C., who did Sims's posterior division of the cervix in his office and sent her home. She was worse after this operation. In Galveston, Texas, she was treated in 1885 with sponge tents repeatedly without permanent benefit. And in the spring of 1886 she was treated in Boston by bougies at stated intervals. The treatment was so painful and the result so unsatisfactory that she abandoned it after a few months' trial. When she consulted me, in December, 1886, she declared herself worse than ever before. Dilatation was done under ether, December 29, 1886, and there was found marked stenosis of the internal os from cicatricial contraction following the division of the cervix. The dilator could not be introduced without previous dilatation with conical bougies. After the dilatation was completed the edges of the posterior slit were pared and brought together with silver wire sutures and the stem introduced. The result was perfect and satisfactory one month later, when she left the city. She has since written me that she has no pain during menstruation

The next case will show the effect of dilatation upon a conical cervix:

Case VIII. *Stenosis from Anteflexion with Elongated Cervix.*—Miss A. B., aged twenty-four, has menstruated since she was fifteen years old, at first without pain. But for three years past she has been having pain with every period, and every year it has increased in severity. Lately she has suffered severe pain, accompanied with backache for two or three days preceding the flow, which is very profuse. This continued during the whole period, which usually lasted a week. Examination showed constriction at the internal os, anteflexion of the body, and a conical cervix which was greatly elongated, the os being near the vulva. Dilatation was done under ether, January 3, 1887. The constriction offered great resistance to the introduction of the dilator, and the dilatation was accomplished with difficulty with my strong dilator. The stem could not be introduced until it had been previously curved by heating over a spirit lamp. A straight stem was used two days later, however, when a larger size was introduced. A pessary was used soon after the operation to prevent a recurrence of the malposition, and to lift the uterus in the pelvis. Her subsequent periods were normal and free from pain and backache. When seen last, in November, 1887, she was enjoying excellent health, and was still wearing a pessary. The condition and position of the os were normal.

The next three are cases of dysmenorrhœa due to flexions of the uterus producing either stenosis or obstruction.

Case IX. *Anteflexion producing Obstruction at the Internal Os; Conical Cervix.*—Mrs. S., aged twenty-seven years, married one year, has menstruated since thirteen years old, with very little pain before marriage, but it increased after marriage, and she did not become pregnant. Three months before consulting me she jumped from a carriage and felt that she had hurt herself, and since then the dysmenorrhœa has been very much worse, and she has had constant pain in the right side. On examination, I found a conical elongated cervix, and small external os, which was extensively eroded. There was a slight obstruction at the internal os, the sound producing pain as it passed, and the uterus was anteflexed. Dilatation was done, February 15, 1887, under ether. She made a good recovery after appropriate treatment for the granular cervix and endometritis. The dysmenorrhœa and pain in the side were immediately and permanently relieved. She became pregnant after treatment was discontinued, and was confined, January 3, 1888, less than a year after the operation.

Case X. *Anteflexion, Obstruction at Internal Os, and Endometritis; Cap-brim Cervix.*—Mrs. C. H., aged twenty-four years, married two years, sterile, has menstruated since fourteen years old, always with pain, until the flow was freely established. The dysmenorrhœa was much aggravated after marriage. Examination showed anteflexion, obstruction at internal os, the passage of the probe producing acute pain, and a condition of the cervix which has never been described before—viz., the anterior lip of the cervix projected forward like the brim of a cap, and something like what is seen in a bilateral laceration of the cervix which has stood for a long time. But in this case the projecting lip was thin and the cervix behind it was eroded. There was descent of the uterus, which was heavy, and this condition was probably produced by pressure upon an habitually full rectum. Dilatation was done under ether, February 27, 1886. Her dysmenorrhœa was immediately relieved, and a pessary, with appropriate local treatment, soon relieved the eroded condition of the cervix and the endometritis. She became pregnant in June, 1887.

Case XI. *Retroflexion and Obstruction associated with Reflex Asthma.*—Miss R., aged eighteen, was thrown from a carriage when ten years old and injured her back. She recovered sufficiently to lead her parents to suppose there would be no further trouble. When menstruation appeared, it was with an effort, very scanty, and associated with some pain. For two years previous to the operation she had been under my observation, and at almost every period something had to be done to establish the flow. A few days before she would have an attack of asthma, which resisted all treatment, and which would increase in severity every day until menstruation was established, when it would gradually subside and disappear. The flow was scant, and often retarded for a week or more, and the patient was a constant sufferer from backache, leucorrhœa, and dysmenorrhœa. At the period preceding the local interference there was a decided convulsive attack, followed by complete nervous prostration, which decided the future action. Examination revealed an acutely retroflexed, undeveloped uterus low in the pelvis, with obstruction at the point of flexion. Dilatation was done under ether, April 10, 1886. A pessary was used to maintain the corrected position of the uterus, and her subsequent periods for a year were normal, and the asthmatic attacks did not again appear. After this a course of electricity by the faradaic current was necessary to develop the uterus, as the flow commenced again to be insufficient.

Case XII. *Anteflexion, Obstruction at the Internal Os, and Concomitant Enlargement of Left Ovary.*—Miss K., aged twenty-one years, has menstruated since she was fourteen years old, with no pain for the first two years. When sixteen years old she commenced to have pain, mostly before the flow made its appearance, and during the last two years it has been very much more severe than formerly. For six months past the pain has been so severe as to compel her to go to bed and take something to bring on the flow. She has complained also of severe pain in the left ovarian region during the interval, which is very much worse just before menstruation. This continued during the flow, and for some time after, being only slightly relieved by it. Examination showed the uterus anteflexed, low in the pelvis, and sensitive to the touch, but freely movable; and there was enlargement of the left ovary, which was exquisitely sensitive. The external os was patulous, but eroded; and the passage of the sound through the internal os caused excruciating pain, but there was apparently little obstruction. Dilatation was done, November 26, 1887, under ether. The left ovary was examined at the time, and found to be of about the size of a walnut. She menstruated December 17th freely without pain, and there was very much less pain in the ovary. She was treated with applications of cocaine to the vagina during the next interval, and she had little or no pain. Her next period was not preceded by the usual pain in the left ovarian region. Treatment was continued during January. When examined March 1, 1887, there was no perceptible enlargement of the ovary, and no undue sensitiveness about the uterus, which was normal. She has had no pain since.

The following three cases will show how hypertrophy and thickening of the lining membrane of the canal may produce dysmenorrhœa and prevent drainage of the discharges from a co-existent endometritis or catarrh, and how this condition is relieved by dilatation:

Case XIII. *Obstruction at the Internal Os, with Endometritis and Granular Erosion of the Cervix.*—Mrs. C., aged about twenty-seven, married five years, sterile, was sent to me by Dr. Wakefield, of Jacksonville, Fla. She had suffered with dysmenorrhœa since puberty, but it had been very much aggravated since her marriage. She was for some time under the care of a specialist in Cincinnati, but was not benefited by his treatment. For a year previous to consulting me her suffering at every period was indescribable. Examination showed a very sensitive uterus, low in the pelvis, a granular erosion of the external os, and a chronic endometritis. The passage of the sound through the internal os produced excruciating pain, but there was apparently very little obstruction. Dilatation was done under ether, September 14, 1885. Her next period was entirely free from pain. Dr. Wakefield wrote me a year later that she continued to menstruate without pain, and very recently he wrote that he believed she was pregnant. The delay of the latter result was probably due to her persistent refusal to undergo after-treatment.

Case XIV. *Obstruction at the Internal Os, Chronic Endometritis, and Erosion of the Cervix.*—Miss M., aged twenty-six years, commenced to menstruate when twelve years old. She always had dysmenorrhœa, and when eighteen had to discontinue her studies because of ill-health due to excessive dysmenorrhœa, backache, and leucorrhœa. For three years previous to the operation her symptoms were very much aggravated. The pain preceded the flow, and was somewhat relieved by it, but severe backache followed. Examination showed the uterus low in the pelvis, greatly congested, and there was chronic catarrh of the uterus and erosion of the cervix. The sound produced severe pain as it passed the internal os, but there was not much apparent obstruction. Dilatation was done under ether, February 5, 1887. She menstruated on February 18th without any pain or inconvenience, and her subsequent periods were free from pain. A pessary was used, and the local trouble received treatment. She is now enjoying excellent health.

Case XV. *Obstruction at the Internal Os, Endometritis, and Sciatica.*—Mrs. M., aged thirty-five years, married eight years, sterile, had very little dysmenorrhœa until after she was married, when it increased in severity. For a year previous to the operation she was troubled with sciatica, which was worse just before and during the menstrual period, and which resisted all treatment. Examination showed a heavy sensitive uterus low in the pelvis, with chronic endometritis, and some obstruction at the internal os, the sound producing severe pain as it entered. Dilatation was done under ether, November 6, 1885. Since the operation she has had no dysmenorrhœa or sciatica. She became pregnant one year after.

In conclusion, I would say that I have never been obliged to repeat the operation since I adopted the use of the stem, and have never failed to permanently cure the dysmenorrhœa; while other operators, who do not use the stem, frequently find it necessary to repeat the dilatation.

I regard the statistics of sterility as deceptive and unreliable, inasmuch as it is impossible to keep all patients under observation after operation. In consequence, some are counted upon the negative side before a sufficient time has elapsed to render conception improbable. Of those operated upon, where sterility existed and where conception could have been expected, about one third have conceived.

243 West Fifty-fourth Street.

Foreign Universities.—Professor Nussbaum having vacated the post of prosector of anatomy at Bonn, says the "Lancet," Dr. Schiefferdecker, of Göttingen, has been appointed to it. The professorship of botany at Göttingen has been conferred on Dr. Peter, curator of the botanical garden in Munich, who was a pupil of the late Professor Robert Caspery's.

DESULTORY REMARKS ON THE RECTUM,

CONSIDERED AS A FIELD FOR SPECIALISTS, ETC.

By WILLIAM BODENHAMER, A. M., M. D.

The following random reflections are the result of reading an article in a late medical journal under the head "The Rectum as a Field for Specialists, etc.":

The rectum, which naturally possesses considerable crookedness and which can never be straight, has from time immemorial been considered as an obscure and an obscene region, once said to be a sort of land of the Cimmerians, where quacks alone lived and thrived, and where humbug darkened the air—a *terra incognita*, as it were, in the dominion of surgery, but into which the surgeon heretofore was loath to venture and cultivate—hence it was almost entirely abandoned to the representatives of the Cimmerii.

But this hitherto dark and loathsome region is now being changed as by magic, and rapidly becoming resplendent, respectable, and inviting, so that multitudes are impressed with the idea that it is a real El Dorado, and but little less alluring than Paradise itself; that it possesses a rich and fertile soil and salubrious climate; hence the present rush of the crowd to it, in order to dispossess the Philistines, and to possess, to occupy, to hold, and to cultivate it themselves, and their posterity after them.

It is now for the first time proclaimed in some of our medical periodicals that the rectum, like the uterus, is justly entitled to be considered a proper field for specialists, ready to be cultivated by their industry and genius. Indeed, the rectum, like the uterus, is already eagerly sought after and cultivated by numberless practitioners everywhere, and of every grade and shade, so that the rectum may now be considered as completely specialized.

It has heretofore always been an enigma why the malformations, injuries, and diseases of the rectum and anus should not be practiced as a specialty, and special hospitals established for their treatment. Let no one say that these maladies can, as a general rule, be treated just as scientifically and successfully by the general practitioner and in our general hospitals. It might just as well be said that the diseases of the eye, the ear, the skin, the lungs, the uterus, and the throat might just as well be treated by the general practitioner and in our general hospitals. If so, why have we special practitioners and hospitals for these diseases, and none for those of the rectum and anus? Why are special professors appointed in our medical colleges for different classes of diseases, and none specially for the diseases of the rectum and anus? Are not these diseases equally as important, as numerous, as painful, and as serious as some of those named, which have those commendable and liberal privileges extended to them?

And, furthermore, the rectum is worthy of all consideration from the well-known fact of its peculiar nervous endowment, which differs essentially from that of any other portion of the intestinal canal, and from the fact that it, with its terminal orifice, is a focus or point of origin for numerous and marvelous reflex nerve phenomena, the subject of which is of the highest interest and importance even in the pathology, diagnosis, and treatment of diseases generally, and which has been much neglected by the profession generally. It is these reflex influences or disturbances which give the diseases of the rectum and anus their importance as causative factors in the production of various secondary affections, and it is through the reflex function of the spinal cord that most of the effects produced by these diseases are brought about. Sometimes both the spinal cord and the brain are involved in these reflex actions. It is a fact which can be substantiated that in many of the derangements, if not diseases, of the contiguous organs—as the uterus and its appendages, the bladder, the urethra, the prostate gland, the vesiculæ seminales, etc.—the primary affection or cause will often be found in the rectum or anus, in the form either of an anal fistula, an anal fissure, a hæmorrhoidal or a polypoidal tumor, an ulcer, a preternatural pouch, a degenerated sacculus, etc. Numerous cases of this kind have come under the observation of the writer, as well as under that of others. Painful and important as the affections of the rectum and anus are, it is very doubtful whether the sympathetic secondary disorders which follow in their train, and to which they give rise, are not equally, if not more, painful and of greater import. Indeed, there is scarcely any organ in the body that is beyond the sphere of their reflex influence, and that does not sometimes sympathize in their derangements.

Such, then, is the importance of rectal reflexes that a disease of the rectum or anus may even be the primary cause of insanity. A case of this very kind came under the observation of Dr. William C. Wile, of Danbury, Conn., and he reported it to the late International Medical Congress. The case was that of an insane patient who had hæmorrhoids, and who, upon the removal of the hæmorrhoids, was cured of his insanity (New York "Medical Record," September 10, 1887, p. 291). This is the first case on record, so far as the writer's knowledge extends, in which insanity has been attributed to hæmorrhoids, and its cure to the removal of that affection. Now, if the diagnosis of Dr. Wile in this case is strictly correct, and if it is true that anal and rectal diseases may even be the primary cause of insanity, why would it not be both right and proper that every insane patient, whether in an asylum or not, should have his or her rectum and anus carefully and minutely explored by an expert rectal specialist, to ascertain to a certainty whether some affection of the rectum or anus might not be discovered to account for the aberration of mind, and, if found, to remove at once both the cause and the effect by rational treatment?

It is proper here, however, to remark, on the contrary, that almost every species of alienation or aberration of mind has, by some of the most eminent authorities, both ancient and modern, been attributed to the cure, the removal, or the suppression of hæmorrhoids. For the cure of insanity some have even recommended the practice of inducing or exciting artificial hæmorrhoids in those in whom none existed by the application of irritating substances within the anal orifice. According to these authorities, hæmorrhoids are really a therapeutical remedy for the treatment and cure of insanity.

Hippocrates declares that in maniacal affections, if varices or hæmorrhoids supervene, they remove the mania: "*Insanientibus si varices aut sanguinis profluvium per ora venarum quæ in ano sunt* (*hæmorrhoides dicunter*) *accesserint insaniæ solutio*" ("Aphorismorum," liber aphor. xxi, sec. 6).

Heister says that he had seen a man who at first became hypochondriac in consequence of the suppression of hæmorrhoids. He then was tormented by other symptoms, which terminated in pain of the head (clavus). ("Acta naturæ curiosorum," lib. vi, obser. 161.)

M. Esquirol says that melancholia and dementia are the most frequent results of the cure of hæmorrhoids in some persons ("Maladies mentales," etc., 8vo, Paris, 1838).

M. Larrouque entertained the same opinion as M. Esquirol ("Traité des hémorroïdes," 8vo, Paris, 1812).

M. Lacoste was also of opinion that the cure of hæmorrhoids in some persons might result in melancholia or dementia ("Essai sur les tumeurs hémorroïdales," 8vo, Paris, 1820).

This doubtful question, however, whether hæmorrhoids will cause or cure insanity, or whether they will do neither, the writer must leave to the learned medical casuists to determine.

And, furthermore, it is also a well-known fact that rectal lesions, through reflex influence, simulate diseases of the contiguous organs, of which many instances could here be given, some of which have fallen under the observation of the writer, as well as under that of others. For instance, in females it frequently occurs that the irritation or inflammation of a hæmorrhoidal tumor, an anal fissure, an occult anal fistula, etc., communicates itself through reflex action to the vagina, especially exalting the sensibility of the recto-vaginal septum to such a degree that coitus can not be consummated at all, or without the most intense suffering. Such cases are sometimes mistaken and improperly diagnosticated by superficial observers.

Alix reports a remarkable case of hæmorrhoids in which the suffering patient had been treated for a long time for a supposed disease of the uterus without any benefit ("Observata chirurgica," append., p. 400, 12mo, Altenbergii, 1774).

Mr. Cockburn also reports an interesting case of a lady who suffered intolerable pain during the act of coition, and who had been treated for cancer of the uterus, when it was subsequently found that her disease was in the rectum, in the form of hæmorrhoids ("Inability of Coition from Hæmorrhoids," in "Medical Essays and Observations," 5th edit., vol. 11, p. 228, 8vo, Edinburgh, 1771).

It may be proper here also to speak of the rectum, and some of the uses, if not natural functions, to which that very convenient, useful, and profitable organ may be put; verily, it may be employed for almost any purpose, and might with propriety be considered as a factotum, or a kind of combination utensil. It is now very properly used for medication and for alimentation; so that physic or food may be addressed to either end of the alimentary canal, and either end of this conduit, within certain limits, may perform the dual function of ingestion and egestion. The gynæcologist now, more than ever before, makes use of the rectum for diagnostic and other purposes. The bladder, in complete retention of urine, is sometimes punctured *per rectum.* Lithotomy is sometimes performed *per rectum.* Impregnation is known to have been effected *per rectum* in cases of malformation, and even accouchement in such a case is known to have been effected through the same medium. Anæsthesia has been effected *per rectum*, but it, like too many other therapeutical novelties, had its rapid rise, its grandeur, and its decadence. Gaseous enemata *per rectum* have been resurrected, after having been dead for a century, and now rising again, but they may soon experience their decline and their second death. But it is not necessary to enumerate any further the many uses to which the rectum may be put, nor the therapeutical remedies or surgical measures that are daily and hourly being introduced for the relief of this now besieged and tortured organ; the writer, however, will merely call attention to what a recent writer says upon the function of the rectum: "I am not aware," says he, "that any writer has yet suggested, or attempted to demonstrate, the probability of any other function pertaining to the rectum than that of defecation" (New York "Medical Record," Aug. 15, 1885, p. 173).

This writer, by the use of the word *defecation*, doubtless means the act merely of extruding the fæces from the body. But the rectum, besides the function of expelling its contents, possesses equally the office of retaining and controlling its contents, for it is in no sense an avenue or a rapid transit merely for the excremental matter. The rectum also possesses the function of fæcation—that is, the entire separation of all the remaining nutritive principles from the innutritive matters that may be found in it. The first are absorbed and the last are rejected. The process of fæcation commences in the cæcum and terminates in the rectum. By the term *fæcation* is meant that function of the cæcum, the colon, and the rectum by which the alimentary mass, after having been deprived in the small intestines of almost all the chyle and a portion of its more aqueous parts, is in the large intestines entirely changed in character and consistence, being regularly formed, and acquiring the peculiar fæcal odor, and thus presenting the distinctive characteristics, of fæces. It can, therefore, be easily demonstrated that the rectum has other highly important functions besides that of defecation merely, but time and space will not now permit any further discussion on this particular subject.

Now, if what has been presented in favor of considering the rectum as a proper field for specialists is not sufficient to establish that fact, the writer would like to know hether there is any necessity whatever for specialism in any disease, or in any other class of diseases. It may, however, be well to remark here that with regard to specialism in medicine the fear is that too many who practice it are not competent, being mere specialists. They are not qualified by experience to practice medicine in general, which is positively a prerequisite, a *sine qua non*, to the successful practice of a single branch of the science. To render the specialist competent to practice in any one branch of medicine, he requires not only a regular education and a general knowledge of the various branches of the science, but ingrafted upon this a minute, accurate, and professional knowledge of the peculiar branch of practice in which he is engaged. Truly the best specialist is the one who has previously practiced medicine in general for some time, or who has taken advantage of a thorough course of clinical instruction in a post-graduate medical school. The general practitioner, as a rule, is considered to possess greater advantages in general medical knowledge and experience than the mere specialist, and can not under any consideration be dispensed with; consequently he is the more important and useful generally of the two. Now, it is not every upstart that can raise and fall the eight notes merely that is competent to teach and to practice music scientifically and successfully, or that is capable of constructing a gamut; neither is every medical tyro who has just passed through the green-room qualified to practice a specialty intelligibly and successfully.

It can not be denied, however, that specialism in medicine is productive of vast good, provided, as has already been observed, the physician or the surgeon practicing any one branch has, in the first place, that general knowledge and scientific attainment which are absolutely necessary for the efficient practice of medicine in its most comprehensive sense.

With regard to the learned or the educational qualifications requisite for the study and the practice of medicine, it may be observed that, while the laudable efforts that are being made to elevate the standard of medical education are resulting in good, it is nevertheless strange that in some parts of our country it is still recognized in practice, if not in theory, that good common sense or mother-wit is all that is requisite to qualify a student to study and to practice medicine, learning not being essentially necessary. Now, it may be observed of common sense that it is an excellent ingredient when well mixed with learning, and is then indeed commendable, but they place too high a value upon common sense alone, making it superior, as it were, to learning, which is even a higher estimate than that placed upon it by that very profound philosopher, Sancho Panza, ex-Governor of Barataria, whose axiom is, "*An ounce of common sense is worth a pound of learning.*"

"It is remarkable," as an eminent author says, "that the science of medicine, by some singular perversion of fact, is regarded by so many generally as one of very easy attainment by almost anybody; but it nevertheless is one which, as the practitioner often finds when too late to remedy, requires learning, study, much patient toil and hard-earned experience, and which, even at the end of a long and laborious life, is often left still unlearned."

In conclusion, the writer would respectfully invite both medical teachers and students, if they have not already done so, to read and study well that very ancient and very remarkable brief treatise on the law of Hippocrates. His rules and precepts for the education and edification of a physician are, in the opinion of the writer, the most admirable ever written; indeed, it is doubtful whether there is any production extant on education to qualify for any profession equal to the rules and precepts which Hippocrates gives for the qualification of the physician. His rules for the attainment of this noble purpose he presents under six prerequisites or qualifications, as follows:

1. Natural talents. Is his genius adapted to the science and the art? Has he received from nature an exquisite discernment, a sound judgment, a character in which mildness and firmness are combined?

2. A good education, so that he may be able and prepared to study the whole circle of science; ignorance proves but a poor foundation, and an empty treasury at all times; he must be a master of his profession, and not a nominal physician merely.

3. He must have a competent instructor.

4. Early study; the student must begin the study in early youth.

5. The student must have industry; he must combine the love of labor with the desire and emulation of all that is amiable and praiseworthy.

6. He must have ample time, so as to continue long in the study.

The writer has given the foregoing brief synopsis as a mere outline, and refers the reader to the law itself ("Hippocratis lex," "Hippocratis opera omnia Graece et Latine ab Anutio Foesio," tome i, p. 1, folio, Genevæ, 1657).

Now, if these very ancient and excellent rules and precepts of Hippocrates were at once adopted in all our medical colleges, and strictly adhered to and firmly enforced, a very great reformation in the science and practice of medicine would soon be perceptible.

27 EAST FORTY-SIXTH STREET, *April 16, 1888.*

WOUND OF THE STOMACH.

RECOVERY.

By C. C. JONES, M. D.,
SNOW HILL, ALABAMA.

On September 12, 1887, Enos B., a colored lad, nineteen years old, got into an altercation with his brother, who stabbed him with a pocket knife, emptying the contents of the stomach through the wound externally.

Enos had, only a little while before, indulged in a full meal of potatoes, meat, bread, and gravy. He walked nearly half a mile after receiving the wound. I saw him about two hours afterward. I found him lying on a pallet, with a gaping wound, over two inches in length, made diagonally across the lower margin of the epigastric region to the left, and from it protruded a large mass of omentum, the air rushing in and out at each respiratory act. He had no exhausting hæmorrhage or alarming shock. His pulse was fairly good.

It was not possible to determine the extent of the internal injury without enlarging the wound and exploring the abdominal cavity. After cleaning the patient, my friend, Dr. B. W. Watson, who had called with me to see him, kindly administered chloroform. The abdomen was well bathed with warm carbolized water. The external wound was enlarged to about three inches or three inches and a half. The stomach, being wounded, was drawn down and partially out and emptied of its remaining contents by gentle squeezing. After contracting, the wound in the stomach measured three fourths of an inch. This was closed by interrupted sutures of fine carbolized silk placed one eighth of an inch apart. The knots were cut close. The stomach was washed off in the carbolized water and returned into the abdomen. Further explorations found no lesions. The abdominal cavity was freed from blood and food. The omentum still protruding was also cleansed (which was no small job) and returned to the cavity.

The external wound was closed by interrupted sutures in the usual way. Over this was placed a carbolized compress, and over all a broad bandage, encircling the body, was tightly drawn. He soon rallied from the anæsthetic and vomited, bringing up a small quantity of grumous fluid—no blood.

A hypodermic of one fourth of a grain of morphine was administered and the patient left with strict instructions not to take anything unless thirst became intolerable, when he might be given a spoonful or two of cold water.

I saw him the following morning. He had rested well; no pain, no tympanites. Had passed urine without difficulty. Temperature, 101° F.; pulse, 90.

The following day the temperature and pulse returned to the normal and remained so. It was not practicable to resort to rectal alimentation, however desirable it might have been in this case. The family had not the facilities for doing it, nor a sensible nurse to whom it could be intrusted. So, after twenty-four hours, I had to permit my patient to venture on a little milk and lime-water. It agreed with him, and was then allowed in small quantities every three hours.

On the third day his bowels were moved by an enema and afterward remained regular, acting every other day. The wound healed kindly. The sutures were removed on the eighth day. In two weeks he was allowed a semi-solid diet and permitted to walk about. In two months he was able to resume his ordinary labors, not having suffered any more discomfort from his wound than is to be expected from a cut finger or simple wound of any part, barring, of course, the restricting of his diet.

This case helps to illustrate the importance of enlarging abdominal wounds or making exploratory incisions into the abdomen, under the best antiseptic precautions, for the purpose of ascertaining and rectifying as far as possible all lesions of the abdominal viscera. In this way, no doubt, many lives can be saved that have heretofore been sacrificed to false teachings or the timiidty of the profession.

THE MOST IMPORTANT ANTISEPSIS.

By L. BARKAN, M. D.,
BROOKLYN.

The healthy human organism may within certain limits be considered an apparatus for self-disinfection. Innumerable quantities of germs surround, pervade, and pass through it without leaving any appreciable trace of their contact. Fortunately, not all of these germs are virulent, many of them are innocuous, and even the dangerous ones vary in degree of harmfulness.

In the light of recent bacteriological researches, we are justified in assuming that most of the constitutional diseases are due to infection by some characteristic bacillus, but it would be erroneous to infer that every one of these bacilli, by its invasion of the human system, in each individual case produced the characteristic systemic disturbance of which it is known to be the cause. Could all these invisible hordes of tormentors and slayers enter the system at the point of attack, then our populous cities would be but vast hospitals, and no single individual would reach the number of years which now constitute the prime of life.

A healthy and well-nourished body is endowed with great powers of resistance to the action of most, if not of all, species of bacilli, thus rendering itself aseptic by virtue of its own healthfulness. A few references to actual experiments will suffice to show the correctness of this view. Professor Traube experimented in 1876 by injecting a quantity of pus into healthy dogs. After twenty-four hours he found no trace of it in the system; his results, however, were different when the quantity was increased. Dr. Trudow inoculated fifteen rabbits with tubercle bacilli; ten of them, which were kept in damp, impure air and on improper food, developed tuberculosis. The five others were permitted to run about in good, pure air, and were well nourished; of these, only one died of a resultant tubercular affection, and four remained well. The experiments of Brown-Séquard, which were made before those of Dr. Trudow, yielded still better results, since of all the animals inoculated with the tubercular virus, not one was lost. He ascribed these results to their being kept in a well-aired open place, supplied with abundant nutriment.

In patients who had only recently developed symptoms of phthisis, Brown-Séquard, Stokes, and Blake aborted the disease by the same treatment of saturating the system with pure air and good food. It must be apparent, therefore, that the power of self-disinfection depends chiefly upon two factors: 1. Thorough impregnation with oxygen of the air. 2. Generous alimentation. These agents must be relied upon to give to the blood that richness, vitality, and vigor which enable it to ward off an invasion of bacterial foes, and by the aid of which they can be most speedily repulsed and driven from the system, even though they have entered the circulation at a vulnerable spot. In addition to these two important factors, several other hygienic requisites must not be overlooked, such as congenial temperature, sunshine, clean dry soil, pure water, moderate exercise, etc., all of which are valuable as accessories to produce the full beneficial effect of pure air and abundant food.

The power of self-disinfection is greatly impaired whenever a serious illness, aggravated by febrile symptoms, takes possession of the body, but it is gradually restored when the illness subsides. Of all the duties of the physician, none is more important than to aid the prostrate organism in its struggle to recover the lost power of self-disinfection, not only by antiseptic chemicals, which are of excellent service wherever their application is admissible, but also by surcharging the system with pure air and nourishing food.

Trite as it may seem, I can not abstain from dwelling upon the necessity for thorough instruction of the attendants in the detail of this work, particularly if the nurses lack professional training. If the physician will explain that all discharges must be quickly removed and all vessels disinfected; define the details by which, according to the location of the sick-room, the most effective ventilation can be accomplished without exposure of the patient; take the trouble to lay down strict rules of what and how much the patient must eat and drink during stated intervals; and insist upon having a full record kept of the food ingested, he will find himself amply repaid, both by the better condition of his patient and the clearness with which he can trace the effect of his treatment. I do not mean that the rules as to particular articles of diet must be inflexible; on the contrary, considerable latitude must be allowed in this respect according to the circumstances, the age, and peculiarities of the patient. But it is necessary that such food be selected as is most nourishing and digestible, and that a fixed minimum quantity be prescribed for ingestion during every twenty-four hours, at least during the critical periods of the disease. Up to within a few years ago the physician was almost powerless to nourish his patient during those periods when the stomach, weakened from fever and suffering, rebelled against its work. Indeed, it is pitiable to think how many lives have been lost from sheer lack of some food which the enfeebled digestive apparatus could prepare for assimilation, so as to tide over the dark hours of the struggle and put the exhausted organism once more on the road to health—to a gradual and complete self-disinfection. But of late years a most important weapon in defense of human life has been placed in our hands with the invention of peptonized foods, particularly that class of preparations known as "beef peptones." Unlike the ordinary meat extracts, they contain not only the stimulating portions, but also the nourishing, life-sustaining albuminoids of the beef in the predigested form known as "peptones," in which they are nearly ready for immediate absorption and assimilation. Thus they combine the two cardinal requisites for reconstruction of tissue: highest nutritive value and greatest digestibility.

Unfortunately, the great body of the profession fail to recognize the importance of peptones for the prevention of the marked loss of tissue in prolonged febrile movements and in other conditions in which digestion is impaired. Having used beef peptones (generally Rudisch's "sarco-peptones") in a great number of cases during the last four years, particularly in typhoid fever, dysentery, cancer of the stomach and rectum, phthisis, scarlet fever, diphtheria, anæmia, vomiting of pregnancy, gastric troubles of all kinds, nervous dyspepsia, Bright's disease, ulcers of the stomach, peritonitis, and cholera infantum, I have come to the conclusion that beef peptones are more nutritive than milk, that the stomach retains them when it tolerates no other food, that infants and aged people can be nourished by them when milk is rejected, and that there is no therapeutic or dietetic agent which in disease will repair bodily waste as quickly, as effectually, and with as little assistance by the digestive organs as beef peptones. I am confident that in many of my own cases, both of children and of adults, a fatal termination has been averted by the timely use of beef peptones.

Appreciating the fact that good air and good nourishment must be chiefly depended upon to check the destructive work of bacilli in the living organism, and possessing in beef peptones a valuable agent to support vitality in the decisive hours of this mighty contest, I now assume charge of the most serious cases with a feeling of greater power and usefulness than heretofore. The records of my casebook will bear out my belief that by a more general adoption of these views and of the dietetic agent mentioned, many valuable lives could be saved or prolonged.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MAY 12, 1888.

CANCER AND ERYSIPELAS AS ANTAGONISTS.

Whatever novelty there may be in the theory of bacteriotherapy, the device of fighting one disease with another is nothing new; indeed, it is daily exemplified on the grandest scale in the practice of vaccination. To set our destroyers at war with one another is an alluring piece of strategy, but our satisfaction with it must be tempered by the reflection that our own bodies necessarily constitute the battle-ground, and that even an attenuated virus may sometimes do serious mischief. On the whole, however, the good achieved by the plan far outweighs its drawbacks, and any enlargement of its field is calculated not only to attract scientific interest, but also to raise hopes of immediate strides in the work of obtaining the mastery over disease. Such being the case, too much importance can hardly be attached to an experiment recently made by Dr. Axel Holst, of Christiania, who, as he relates in the "Centralblatt für Bakteriologie und Parasitenkunde," has attempted to cure cancer by inoculating the patient with erysipelas, acting under the advice of Dr. Malthe and Dr. Koren.

The patient was a woman, about forty years old, who had had a cancer of the right breast removed in the spring of 1887. In the course of a few months, recurrence had taken place in the scar, and the skin had rapidly become the seat of extensive carcinomatous disease, so that by August almost the whole of the integument of the right side of the front of the chest presented a raw surface with subjacent cancerous lumps, accompanied by glandular swellings above the clavicle. As to her general condition, however, the woman was still in blooming health. Two attempts were made to inoculate the open surface and the adjacent unbroken skin with beef-peptone-agar-agar cultivations of Fehleisen's *Streptococcus erysipelatos*, and the second one was successful. For two months and a half the favorable effect was very striking; islands of epidermis formed, considerable marginal cicatrization took place, and the whole open surface underwent a sort of shrinking. Unfortunately, however, the improvement now ceased, the new cicatricial tissue gave way, the lymphatic glands began to enlarge again, a tumor appeared in the other breast, the inner aspect of the arm became involved, and the patient's general condition went from bad to worse until it was seriously questioned whether she would not have been better off if she had been let alone. One noteworthy feature of the case was that the erysipelas never altogether subsided, but became chronic.

The experiment must, of course, be counted as a failure, but there is this consolatory feature about it, that the case was one of the most unpromising for the success of treatment of any sort. Possibly in more favorable cases the final results may yet be made satisfactory, notwithstanding Neelsen's observation, cited by Holst, of a case of mammary cancer in which a casual attack of erysipelas seemed to hasten the course of the malignant disease.

THE CHOICE OF A WET-NURSE.

This is a question that often involves the practitioner in responsibilities and perplexities that ought to be lightened for him as much as possible, but it is one on which the text-books are for the most part not very explicit. It was recently treated of somewhat in detail by Professor Budin, of Paris, in a clinical lecture, published in the "Revue générale de clinique et de thérapeutique."

The first point mentioned by M. Budin—and it is a point by no means uncalled for—is that, when the physician goes to an agency to select a wet-nurse, he should make up his mind to carry off the best one, and not allow his patient's natural preference for a good-looking one to interfere with this resolution. The nurse should be between twenty and thirty years of age, and from two to four months should have elapsed since her confinement, so that she may be practically past the dangers of pelvic inflammation and of trouble with the nipples or the breasts, and her child may be old enough to show whether it is syphilitic or not. But she should not be too long past her confinement, for then her milk is apt to contain too much fatty matter, although there are numerous exceptions to this rule, and some women's milk is excellent at the end of fourteen months. In Paris, a woman who has before gone through the period of lactation is rightly preferred, both because she is more experienced in giving suck, and because the guarantees of her fitness are stronger. If she is from the country, she should have been long enough in town to have become acclimatized.

While it is true that robust women generally make the best wet-nurses, it is not rare to see thin and puny women do well, provided their appearance is not due to disease. The color of the hair is of little consequence, but a good state of the teeth is important, for without it mastication and digestion are apt to be imperfect. The neck should be examined for glandular enlargements. The breasts are to be judged of, not by their size *en masse*, much of which may be due to subcutaneous fat, but by the actual volume of the gland, in which the granular acini should be readily perceptible to the touch, and over which the skin should glide easily. The venous circulation in the skin of the breasts and between them should be free, the nipple should be neither too large nor too small, and the milk should flow readily. The milk may appear clear or thick, according to the time of the examination. If the breast has not been emptied for some time, it will be watery; after a little time it will become thicker. But the examination of the milk is of little consequence compared with that of the nurse's child, care being taken to make sure that the child shown is really her own, and not one borrowed for the occasion, also that it has had no food but its mother's milk. If it is hearty and well developed, with firm flesh, if its genitals and anus are free from redness, and if its passages are of good color, the chances are that the mother will make a good nurse.

Incidentally, M. Budin alludes to a question that is not likely to come up often in this country—that of whether a married woman or a single one is to be preferred. Each, he says, has advantages and disadvantages; if the girl's morality is the more doubtful, the married woman is the more expensive, to say nothing of possible annoyance from her husband. He states that wet-nurse agencies are better managed in Russia than in France. Although the expense is greater, the patron is entitled to three changes within a period of two months, without additional charge, so that it is for the interest of the establishment to provide a good nurse at the outset. When it is practicable, it is better to engage the nurse beforehand; she may be made to come with her child a week or two before the lady's confinement, so that time may be allowed for a leisurely inquiry into her capability. This advice, of course, is intended for cases in which it is known that the lady is not to nurse her baby herself.

The health of a wet-nurse should be attended to after she enters upon her duties. She should take frequent baths; she should go out every day; her ordinary food and mode of life should not be changed too suddenly, and particularly too much meat and wine ought not to be given to a woman from the country. If her milk shows signs of failing, a change need not be made at once; with a little patience, supplementing the supply with cow's milk or ass's milk, an abundant flow will often set in again. The re-appearance of the menses will do no harm.

COLD AS A CAUSE OF DISEASE.

In the older text-books of medicine exposure to cold figures prominently among the causes of a great number of diseases, both acute and chronic, especially inflammatory affections. One can hardly have kept an eye on the medical literature of the last ten or fifteen years, however, without having become aware of the tendency to restrict the scope of this ætiological factor more and more. This has doubtless been owing in great part to the increasing extent to which the germ theory of disease has met with acceptance, but probably it has been due also in some degree to the growing recognition of the fact that many acute attacks are but the result of antecedent disease—a recognition which may perhaps be said to have culminated in the present skepticism as to the existence of such a disease as idiopathic peritonitis. It is only here and there that this change of ætiological doctrine has dawned on the laity, and patients still go on recounting that on a certain occasion they "took cold," and alleging that that is the cause of their ailment, whatever it may be. Even the medical mind is hardly prepared for so entire a dethronement of cold as a cause of disease as Dr. William H. Ransom lately sought to effect in a presidential address delivered before the Medico-chirurgical Society of Nottingham, England, an abstract of which is published in the "Lancet" for April 21st.

It would be unfair to judge of the length to which Dr. Ransom went by the fact that he closed a list of diseases of which cold had been alleged as the special cause with the expression "and with more justification frost-bite, chilblains, and chapped hands"; for he doubtless did not mean to question the agency of cold in the production of those accidents. Still, his denial of the justice of imputing diseases to the agency of cold was more thorough than any other that we remember to have seen. He founds his argument largely on the fact that many of the affections commonly imputed to cold are not more prevalent in cold seasons than at other times, or in high latitudes than elsewhere, on an alleged tendency to underrate the numerical force of the instances in which exposure to cold fails to be followed by disease, and on the theoretical improbability that an agency acting on the external surface should be capable of lighting up an inflammation now of one internal organ and now of another. Other arguments are advanced, and the whole article is written in a most philosophical way; in particular, it gives a pithy and excellent outline of the definition of inflammation as "the reaction of a living tissue to an injurious irritation." But we think we have adequately stated the main points in the position taken. To the general drift of the address we have no objection to make, for it is in consonance with the new light that is being shed on ætiology at the present time; but perhaps Dr. Ransom has erred in inferring that, because cold is not the *sole* cause of a certain illness, it is not *a* cause.

CORPULENCE AND ITS ATTENDANT EVILS.

Professor E. Heinrich Kisch, of Prague, has contributed to the "Deutsche Medizinal-Zeitung" an article on the cosmetic therapeutics of corpulence, and he justifies himself in viewing the evils of corpulence from the cosmetic point of view with the reflection that it is commonly not the involvement of the general health that leads corpulent persons to seek for medical advice, but the disfigurement that obesity entails. Foremost among the blemishes to which it gives rise he ranks excessive size of the breasts in women, which, as he has often observed, leads them to undergo dietetic and medicinal courses of treatment so severe as to bring about a sort of marasmus. He alludes to the advice given by Galen and Cælius Aurelianus to the Roman ladies thus affected to use poultices of Lemnian earth, and adds that the fashionable ladies of Paris endeavor to restrict the growth of their breasts by compressing them with hemispherical cases. But he has not found compression to be of any avail, and he advises against the internal use of preparations of iodine, for, although it reduces the size of the breasts, it does it at the expense of the general health. Local applications are more to be recommended, especially an ointment composed of about fifteen grains of iodoform deodorized with Tonka beans, half an ounce of vaseline, and two drops of oil of peppermint. This is to be rubbed into the breasts, and they are then to be swathed with linen moistened with a warm solution of one part of alum and five parts of acetate of lead in a hundred parts of distilled water, impermeable paper being laid over the whole. The dressing should be changed night and morning, and its use should be continued for several weeks. To prevent flaccidity and wrinkling of the breasts as the fat disappears, he prescribes frictions with some aromatic spirit and suspension of the organs with a bandage.

It is in the abdomen that corpulence is the most obstinate. Here iodine applications are of little avail, and massage is most useful. The author commonly prescribes frictions with a solution of potassium iodide in twenty parts of vinegar of squill and the constant use of a girdle, preferably of deerskin. The excessive sweating of the corpulent is best treated by the local and general application of cold water perfumed with simple or aromatic vinegar. The use of protective pieces of rubber, oiled silk, etc., in the armpits is injurious, because it interferes with the vaporization of the secretion and causes it to soak and irritate the epidermis. Irritations of the skin from chafing, as under pendulous breasts and in the fold of the groin, may be mitigated or prevented by dusting the parts several times a day with a powder composed of one part of salicylic acid and fifty parts each of Venetian talc and rice-starch. Over-activity of the sebaceous glands, comedones, rosacea, and brownish, rusty pigmentations are apt to accompany corpulence, and they are to be treated by measures aimed at the corpulence itself, especially careful regulation of the diet. For the baldness that is often associated with an excessive development of fat in young persons the author states that he knows of no good remedy.

MINOR PARAGRAPHS.

THE LATE DR. AGNEW.

The current number of the "Archives of Ophthalmology" contains an exceedingly appreciative obituary notice of the late Dr. Cornelius Rea Agnew, signed by the editor, Dr. Knapp. "All his professional work," says the notice, "both private and public, was distinguished by a spirit of caution, neatness, and deliberation. He was one of the most adroit surgeons. The writer of these lines, who often had the privilege of witnessing him at his work, never saw him do a clumsy operation."

PRECAUTIONS AGAINST THE SPREAD OF INFECTIOUS DISEASES IN PUBLIC INSTITUTIONS.

On the 7th inst., the president of the city Board of Health, acting under instructions from the board, addressed a circular letter to the managers of the general hospitals and dispensaries, calling attention to the necessity of suitable facilities for isolating patients with infectious diseases. This action is wise, for too great pains can not be taken in the direction indicated. It is also well that the board refrains from insisting on any specified provisions, at least for the present, but leaves them to the thoughtfulness and public spirit of the managers of the various institutions.

MEDICAL MEN IN GENERAL LITERATURE.

We have often commended the efforts occasionally made by members of the profession to write of other than medical subjects. We wish they were more frequent. One of the latest that have come to our notice is the opening article in the current number of "Scribner's Magazine," entitled "In the Steamer's Track," by Dr. William Perry Northrup. It is a spirited sketch of the cruise of a new York pilot-boat, and of her company's brave but unsuccessful attempt to make port with a derelict bark. We hope that Dr. Northrup will yet essay something more intricate, for this little story gives ample token of his ability to do so successfully.

THE RELATIVE FREQUENCY OF AMPUTATION IN THE MALE AND FEMALE.

In a pamphlet issued by Mr. A. A. Marks, the well-known manufacturer of artificial limbs, there are some interesting statistics in regard to the relative frequency of amputation in the two sexes. Out of a total of 8,606 cases in which artificial limbs have been furnished, he finds the records of 3,500 sufficiently full to enable him to make the following estimates: Eighty-five per cent. of amputations are of legs and 15 per cent. of arms. Of legs, 49 per cent. are right, 46 per cent. left, and 5 per cent. both. Seventy-eight per cent. of amputations occur in males and 22 per cent. in females. In the latter, amputation of the right leg is more frequent than that of the left, and the proportion of double amputations in males is nearly twice that in females.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 8, 1888:

DISEASES.	Week ending May 1.		Week ending May 8.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus fever	0	0	1	0
Typhoid fever	11	9	12	1
Scarlet fever	209	38	213	32
Cerebro-spinal meningitis	6	7	5	6
Measles	93	6	134	10
Diphtheria	162	59	186	46
Small-pox	17	7	17	4

The late Dr. Agnew.—The following is an extract from the minutes of the annual meeting of the Alumni Association of the College of Physicians and Surgeons, held on the 9th inst.:

Resolved, That the following memorandum be entered upon the minutes of the present meeting, and that a copy of the same be sent by the secretary to the family of the deceased and to the New York "Medical Record" and the "New York Medical Journal":

It becomes our sad duty to record the death, on Wednesday, April 18th, at his residence in this city, of our associate, Cornelius Rea Agnew. He was the first president of this association after it became incorporated, in 1873, and he served it faithfully in this capacity for a number of years. He held the same office, for the second time, at the time of his death. It was largely through his influence that the association was changed from a formal and only feebly active society into an agency for the direct and vigorous promotion of the interests of the college in its work of medical education. From the very first up to the time of his death he never ceased to contribute time, earnest thought, and liberal offerings of money toward the attainment of this object. It is a pleasure for us now to think that he had the satisfaction, before he died, of witnessing the first fruits of his own planting and unwearying cultivation. Without his energetic and untiring co-operation and wise counsel it is highly probable that a few spasmodic efforts at the beginning would have soon given place to the lifelessness that characterized the earlier period of the association's existence.

To his sorrowing widow and children we would extend our sincere and heartfelt sympathy, begging them to accept from us the assurance that the memory of their distinguished husband and father will be warmly cherished by the numerous alumni of the College of Physicians and Surgeons in the City of New York.

[Signed.] A. H. Buck,
G. G. Wheelock.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending May 5, 1888:*

Oberly, A. S., Medical Inspector. Granted six months leave, with permission to visit Europe.

Hord, W. T., Medical Director, and Woolverton, T., Surgeon. Ordered as delegates to represent the Medical Department of the Navy at the meeting of the American Medical Association, May 8th, at Cincinnati, Ohio.

Bradley, George P., Surgeon. Ordered to Navy Yard, Brooklyn, N. Y., without delay.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the four weeks ending May 5, 1888:*

Hutton, W. H. H., Surgeon. To proceed to Biloxi, Miss., on special duty. April 21, 1888.

Long, W. H., Surgeon. Granted leave of absence for fourteen days. April 21, 1888.

Sawtelle, H. W., Surgeon. Granted leave of absence for seven days. April 21, 1888.

Urquhart, F. M., Passed Assistant Surgeon. Granted leave of absence for seven days. April 10, 1888.

To assume temporary charge of Cape Charles Quarantine Station. April 17, 1888.

White, J. H., Passed Assistant Surgeon. Relieved from quarantine duties at Sapelo Station. April 21, 1888.

Williams, L. L., Passed Assistant Surgeon. Relieved from duty at Marine Hospital, Boston, Mass.; to assume charge of Cape Charles Quarantine Station. April 17, 1888.

Bratton, W. D., Passed Assistant Surgeon. Relieved from duty at Marine Hospital, San Francisco, Cal.; detailed as Medical Officer, revenue steamer Bear, during summer cruise. April 19, 1888.

Bailhache, P. H., Surgeon. To proceed to New York for temporary duty. May 1, 1888.

Hutton, W. H. H., Surgeon. Detailed as president of board to report as to quarantine establishment at North Chandeleur Island, Gulf of Mexico. May 4, 1888.

Wyman, Walter, Surgeon. Granted leave of absence for fourteen days. May 4, 1888.

Stoner, G. W., Surgeon. Detailed as chairman of board for the physical examination of candidates for appointment and promotion, Revenue-Marine Service. May 5, 1888.

Mead, F. W., Passed Assistant Surgeon. Detailed as recorder of board for the physical examination of candidates for appointment and promotion, Revenue-Marine Service. May 4, 1888.

Carter, H. R., Passed Assistant Surgeon. Detailed as recorder of board to report as to quarantine establishment at North Chandeleur Island, Gulf of Mexico. May 4, 1888.

Devan, S. C., Passed Assistant Surgeon. Relieved from duty at Sapelo Quarantine; to assume charge of the service at Savannah, Ga. May 3, 1888.

White, J. H., Passed Assistant Surgeon. Relieved from duty at Savannah, Ga.; to assume charge of Sapelo Quarantine Station. May 3, 1888.

Society Meetings for the Coming Week:

Monday, *May 14th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); Lenox Medical and Surgical Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *May 15th:* Florida State Medical Society (Gainesville); Illinois State Medical Society (Rock Island); Missouri State Medical Association (Kansas City); New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and St. Lawrence (annual), N. Y.; Ogdensburg, N. Y., Medical Association; Hampden, Mass., District Medical Society (annual—Springfield); Baltimore Academy of Medicine.

Wednesday, *May 16th:* Iowa State Medical Society (Des Moines); Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

Thursday, *May 17th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *May 18th:* Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *May 19th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

Chauncey L. Mitchell, M. D., of Brooklyn, died on Tuesday, the 8th inst., in the seventy-fifth year of his age. Dr. Mitchell was a native of Connecticut. He took his medical degree from the College of Physicians and Surgeons in 1836. At the time of his death he was one of the consulting physicians of the Long Island College Hospital and St. John's Hospital. He was highly esteemed as a practitioner and as an occasional contributor to medical literature.

John B. McIntyre, M. D., died on Sunday, the 6th inst., at the house of his brother, Dr. Burnett C. McIntyre, in New York. The deceased was a graduate of the College of Physicians and Surgeons of the class of 1877.

Edward Swift Dunster, M. D., of Ann Arbor, Michigan, professor of obstetrics and diseases of women and children in the University of Michigan, died on Thursday, the 3d inst., at the age of fifty-four years. The immediate cause of his death is said to have been pneumonia. Dr. Dunster was born in Maine, took his college course at Harvard, and obtained his medical education in New York. He served as a medical officer in the Army of the Potomac, and after the war he entered upon practice in New York, where he was for several years one of the editors of this journal, and for two years, from 1869 to 1871, its sole editor. Having taught in various capacities in Dartmouth College, the University of Vermont, and the Long Island College Hospital, he was appointed to his chair in the University of Michigan in 1873. In every position that he occupied he made himself felt as a man of the utmost force and worth, and he was widely recognized and admired for his insight into the requirements of medical education and the principles of ethics, and for his skill and energy in expounding his views. He was also highly esteemed for his personal qualities.

Proceedings of Societies.

AMERICAN MEDICAL ASSOCIATION.

Thirty-ninth Annual Meeting, held in Cincinnati on Tuesday, Wednesday, Thursday, and Friday, May 8, 9, 10, and 11, 1888.

THE meeting was called to order by Dr. W. W. Dawson, ex-presidents Davis, Brodie, Richardson, and Sayre on the platform. Addresses of welcome were made by the mayor and by Dr. C. G. Comegys. Dr. Comegys spoke of the early medical history of Ohio, and gave sketches of Dr. Daniel Drake and Dr. Benjamin Dudley, of the Transylvania University, and of the developments of medical education in Cincinnati.

The Mission of the American Medical Association was the title of the president's address, which was then delivered by Dr. A. Y. P. GARNETT, of Washington. He said he had been specially moved to select this subject by the fact that at no period since the formation of the association had its enemies been so bold, so reckless, and so unscrupulous in their efforts to destroy its influence and power. The paternal relation held by this organization to the entire medical profession of the United States imposed upon it duties and responsibilities of the gravest character. It stood before the world as the chosen custodian of all that pertained to the preservation and advancement of professional interests, as well as to medical science *per se;* it was intrusted with the delicate and difficult task of elevating and maintaining the medical character of the country upon the highest moral and intellectual plane. Its annual meetings must not be regarded as solely for the purpose of considering the science of medicine in either its theoretical or its practical aspect and supplemented by the pleasures of social intercourse. While there was ample cause to be gratified with the rapid progress made by some departments of medicine in this country within the last decade, still very little had been effected in the direction of a general reform in the medical schools. What could the association do to further raise and promote a higher standard of medical education in the United States, to curtail the number of medical schools, and thereby gradually restrict to a conservative limit the annual hosts of graduates turned loose upon the public by those institutions? The initial step must be taken by this body in some mandatory form. For a long period all measures brought before it having for their object an interference with or material modification of the systems pursued by the medical colleges were met by a determined and successful opposition on the part of those members who represented such institutions. While it could not be denied that there were medical colleges in this country unsurpassed by those of Europe in their essential appointments and facilities for the education of medical students, the equally undeniable fact remained that we fell far behind them in the systems of study pursued. He submitted the following suggestions:

PROPOSITION 1. That a standing committee, to be called a committee on legislation, be appointed for each State and Territory and the District of Columbia, to consist of five members of the medical profession in good standing, three of whom should have no official connection with any medical school or college, whose duty it should be to carry out as far as possible the following instructions:

First. That each one of said committees, or a majority thereof, should attend the sessions of their respective Legislatures, or from time to time as their duties might require, for the purpose of using all honorable means looking to the reduction of the number of medical schools in the United States, and a consequent diminution in the annual number of medical graduates; that as a practical measure to this end they should urge the passage of a law requiring that in the future granting of charters for creating medical schools, there should be a clause in every such charter requiring that all schools or colleges thus created demand a full term of four years' study before granting a diploma to any student thereof, and that no student should be admitted to matriculate who had not passed a satisfactory examination, both oral and written, in the ordinary branches of academic study; and, further, that any college failing to show a greater number than fifty matriculates annually for three consecutive years should forfeit its charter and be abolished.

Second. That they use all diligent effort to secure an ordinance creating in each State and Territory where no such board at present existed, and the District of Columbia, a board of medical examiners, which should have no connection with any medical school, and which should be required to examine all applicants for license to practice medicine in their respective States or Territories and the District of Columbia; and that any person who might be detected in practicing any branch of the healing art without a license granted by said board should be subject to such penalties as the law might provide. That this committee be authorized by statute to select and nominate to the governors of the States and Territories and the District of Columbia seven competent and learned members of the medical profession to constitute said board of examiners, who should have the exclusive power to issue licenses to practice the art and science of medicine and surgery.

Third. That the chairmen of said committees of five be required to submit at each annual meeting of this association a report embracing a full statement of what had been accomplished by each.

PROPOSITION 2. That the faculties of the several medical schools within the limits of the United States be once more urgently requested to call a convention at some central point for the purpose of consultation and adopting some general and uniform system of medical education more comprehensive and rigid in its requirements, and more in accord with the spirit of the age and the advanced progress of medical science, suggesting a four years' term of study and the requirement of a preliminary education, including some knowledge of the classics. That any college or school which should refuse to enter into such an arrangement as might be decided upon by said convention should be excluded from all connection with the American Medical Association, and its alumni not recognized as members of the regular profession.

He was aware that these suggestions embraced some very radical and seemingly impracticable changes; but, as they pointed, in his judgment, to the right direction, he trusted that they might not prove to be seeds sown upon barren soil.

In his further remarks the president spoke of the success of the Ninth International Medical Congress, and referred with regret to the lack of adequate subscriptions to the Rush monument.

"In concluding this address," he said, "I desire to offer to you, gentlemen, my congratulations upon the proud and enduring position now occupied by this association. Resting, as it does, upon the solid foundation of a moral, intellectual, and scientific basis, it has steadily from its birth gained in strength and influence and won for itself the support and approval of our brethren throughout the length and breadth of this country—to-day more powerful, more self-reliant, more progressive, and stronger in the affection of its members than at any former period of its existence. Let us indulge the hope that those of our earlier friends whose allegiance and interests have been temporarily alienated from us may ere long so subordinate the discrepancies of individual judgment and impulses of resentment to the fraternal agencies of a common calling and the pacific demands of a common science as to feel justified in once more uniting with us in our efforts to maintain and perpetuate the power, influence, and usefulness of this wise, conservative, and philanthropic organization." [We are indebted to the "Journal of the American Medical Association," in which the address will appear in full, for advance sheets of its issue for this week, which we have been enabled to compare with our own dispatches.]

The Address in Medicine.—On Wednesday the address in medicine was delivered by Dr. Roberts Bartholow, of Philadelphia. The speaker first alluded to the fallacies of the sects in medicine, instancing those set forth in an advertising pamphlet recently published by a St. Louis drug-house. As a rule, he said, the profession were not sufficiently versed in therapeutics. The multiplicity of drugs was to be deplored; the official list in the pharmacopœia should be abridged. The administration of crude vegetable drugs was often not followed by definite results, for they might contain antagonistic elements. Alkaloids and other active principles should be used instead. In this connection, allusion was made to the "dosimetric" method, which, said the speaker, contained no new truths, was superficial, and was not based on the physiological action of drugs, as all therapeutics ought to be. A drug having an elective action on a tissue exerted a medicinal influence on that tissue. Electricity, although abused by charlatans, was unrivaled in its proper sphere. Its value was based on two established facts, the power of the galvanic current to influence the circulation and its electrolytic action.

The Trustees of the "Journal" reported that the issue now amounted to 4,572 copies sent to members and subscribers, and 425 sent out in exchange. The "Journal" now had its own office and type, and its receipts were in excess of its expenses. The intention was to enlarge the editorial corps shortly, and bring the "Journal" out in a new dress. It was asked that the association place the exchanges and the review copies of books at the editor's disposal, instead of having them sent to the library of the Smithsonian Institution.

The Committee on Dietetics made a preliminary report, in which, after recommending a continuance of its work, dyspepsia was declared to be the national disease, and was attributed largely to faulty alimentation. Medication should be subsidiary to dietetics in the treatment of disease. The great mortality among children was largely preventable, and therefore criminal. Venders of impure milk should be tried for manslaughter. Empiricism in the use of modified starch foods before dentition should be overcome. Over-work, worry, whisky, and badly cooked food were destroying the race, and it was the duty of the profession to arrest their action. Proprietary foods were condemned, and their investigation by State authority was urged. Dietetics could not be built up into a special system of cure. The report was supplemented by a brief report from the sub-committee on infant feeding. On motion, the committee was continued, with power to add to its membership and, if necessary, to be constituted a section. It was also instructed to investigate proprietary foods, and report at the next meeting.

Amendments to the By-laws were proposed by Dr. N. S. Davis, of Chicago. The first looked to the installation of applicants into full membership on payment of the initiation fee; the second, to shortening the term of a trustee's service; and the third, to substituting for the nominating committee a general standing committee having the same and increased powers. The first and second were adopted. The third was made the special order for the next morning.

Charlatanry and the Religious Press.—The Secretary read a memorial from the Arkansas State Medical Society relating to advertisements of quack nostrums in religious newspapers. Personal certificates from clergymen and the editorial indorsements of those newspapers gave quackery a standing with the community which it would not otherwise have. Members of the medical profession were in the habit of treating clergymen gratuitously, and this was the way in which they were rewarded. To accept such advertisements for the support of the paper was doing evil, that good might result, and was inconsistent with the moral pretensions of the clergy. The co-operation of the association and that of State societies were invoked to secure a suppression of the evil. A resolution was passed approving of the memorial.

Dr. S. W. Gross, of Philadelphia, presented an invitation from the Philadelphia County Medical Society for the association to hold its next meeting in Philadelphia. Referred.

A Proposed Neurological Section.—Dr. George M. Brown, of Virginia, presented a communication to the effect that the study of insanity ought to be encouraged by the establishment of a neurological section, and that the association urge the establishment of professorships of the branch in medical schools. Adopted.

Report of the Committee on Nominations.—The committee reported as follows: For president, Dr. W. W. Dawson, of Ohio; for first vice-president, Dr. W. L. Schenck, of Kansas; for second vice-president, Dr. Frank Woodbury, of Pennsylvania; for third vice-president, Dr. H. O. Walker, of Michigan; for fourth vice-president, Dr. J. W. Bailey, of Georgia; for treasurer, Dr. R. J. Dunglison, of Pennsylvania; for secretary, Dr. W. B. Atkinson, of Pennsylvania; for librarian, Dr. C. H. A. Kleinschmidt, of the District of Columbia; for trustees, Dr. E. M. Moore, of New York, Dr. J. H. Hollister, of Illinois, and Dr. J. M. Toner, of the District of Columbia; for members of the judicial council, Dr. W. A. Phillips, of Kansas, Dr. A. M. Pollock, of Pennsylvania, Dr. W. C. Van Bibber, of Maryland, Dr. J. F. Hibberd, of Indiana, Dr. C. S. Wood, of New York, Dr. J. McF. Gaston, of Georgia, Dr. —— Taylor, of New York, and Dr. G. L. Porter, of Connecticut. The report further recommended that the next meeting be held at Newport, Rhode Island, beginning on the first Tuesday in June, 1889; that the address in medicine be delivered by Dr. William Pepper, of Pennsylvania; the address in surgery by Dr. P. S. Conner, of Ohio; and the address in State medicine by Dr. W. H. Welch, of Maryland.

The Address in Surgery was then given by Dr. E. M. Moore, of Rochester, New York. The surgeon, he said, depended more upon his individuality than upon his surroundings, and a surgical education should take cognizance of this fact. In former times the supernatural had hampered the rational development of surgery; to-day surgery sustained definite relations to the natural sciences, and the present treatment of wounds had been evolved in accordance with their laws. Hippocrates had not performed amputation as now understood; the operation dated back only three hundred years. Paré's ligature was the beginning of rational surgery; from the time of its employment the evolution of hæmostatic methods had progressed up to the time of Esmarch and Kœberlé. The water dressings of Galen and Liston were still somewhat in vogue, and until within late years the methods of operation had made the open treatment necessary. The perfecting of the ligature had wrought some change, but the mortality was still high. After alluding to the great benefits that had followed the introduction of antiseptic methods, the speaker contrasted the former treatment of gunshot wounds, which were considered as poisonous, and treated by cauterization and the removal of the bullet, with that now adopted, when the bullet was recognized as innocuous and left. In abdominal wounds the experience of Parke and Senn had pointed to definite operative procedures. Gratification was then expressed that maudlin sentimentality had not yet triumphed over vivisection. Enterectomy was now a successful operation in cases of gangrenous hernia. The essayist reported two cases of rupture of intestines from external violence without apparent injury to the abdominal wall. The beneficent results of tenotomy were then pointed out, but the speaker also remarked that the early zeal displayed concerning it was an illustration of the evil tendency of enthusiasm over a single idea. The speaker then quoted at length from a paper on compound dislocations of the ankle joint which he had read at last year's meeting of the New York State Medical Association. Surgery had been specially progressive under antisepticism, and Lister's name had added a word to the language. Mercuric chloride was the best germicide, as shown in Macewen's thousand reported cases of osteotomy without a bad result, and in Volkmann's tables of compound fractures of the thigh. But its progress had been most pronounced in laparotomy; in certain cases this was the most dangerous of operations, but to-day it had the best record among major operations. Antiseptic laparotomy had begun when Keith lost his tenth patient after nine successes. The essayist still used opium in peritonitis. Supravaginal hysterectomy had found its culmination in Péan's method of treating the stump. Prince's plan for sterilizing air was a valuable supplement to Listerism. Septicæmia would soon be as rare as scurvy. The future of the profession would be largely surgical.

The Rush Monument.—Dr. A. L. Gihon, of the navy, chairman of the committee of the Rush monument, read a report recommending that individual members of the committee should constitute themselves local committees to receive and forward money for the fund. Subscriptions of one dollar were solicited, but larger sums would be accepted. The treasurer of the Rush monument fund, Dr. J. M. Toner, of Washington, reported that remittances had been received from eight States and from the medical corps of the army and navy, and that the fund now amounted to $710. The Pennsylvania State Medical Society had voted $500, payable in annual installments of $100; California had contributed $105; and last month Michigan had voted $100, which had not yet been received.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of April 3, 1888.

The President, Dr. C. L. Dana, in the Chair.

Exophthalmic Goitre.—Dr. A. D. Rockwell gave the histories of two cases illustrating results which could not infrequently be obtained by treatment. The first case was that of a young woman who for a year and a half had presented the three symptoms, protrusion of the eyes, swelling of the neck, and increased frequency of the pulse. The neck had measured 14 inches and the pulse had varied between 140 and 160 or above. The respiration had been 35 as a rule. After four months of treatment, consisting of dietetic regulation, internal medication, and applications of electricity to the neck, the size of the goître had been reduced one inch, the exophthalmia had diminished, and the pulse had been lessened 60 beats. The patient's whole physical condition also had been changed, so that she could engage in the occupations and the enjoyments of life. At the end of treatment the pulse was 75 or 80. It had intermitted from the first, and it still retained this characteristic. Five years had elapsed since the discontinuance of treatment, and there had been no relapse.

The second case was that of a man still under treatment. Out of thirty cases in the speaker's experience this was the second in which the disease had occurred in the male. The case was also of an incomplete type; there was no enlargement of the thyreoid. There was some exophthalmia, also a peculiar puffiness of the lids. When the patient was first seen the pulse had been 105. It was now 85, having been reduced 20 beats. The case illustrated the power of treatment to reduce the pulse. In the majority of cases amelioration of the symptoms was obtained, in others there was no improvement, but in still others, amounting to a considerable proportion, decided benefit resulted. Quite a number of cases had been approximately cured. The first case exhibited was an instance of this kind.

The President asked whether Dr. Rockwell felt confident of his diagnosis in the second case.

Dr. Rockwell replied that the patient had been referred to him by Dr. Gruening, whom he had consulted for the protrusion of the eyes. Dr. Gruening had agreed to his diagnosis, also Dr. Hochheimer, the patient's physician. He could suggest nothing else which would account for the persistent frequency of the pulse.

Acute Idiopathic Neuritis.—Dr. W. M. Leszynsky presented a patient and read the history of the case, with records of the electrical tests.

Dr. Birdsall, while acknowledging the difficulty of following the details of a written history, had the impression that the case presented was one of periarthritis with neural involvement starting from the joint disease. Dr. Jacoby had reported a number of similar cases.

Dr. Jacoby was inclined to the same view, yet he had understood that there had been no antecedent joint trouble either in the shoulder or in the wrist.

Dr. Birdsall added that in some cases the pain, the joint involvement, and the paralysis appeared together. Especially in the case of the shoulder there was often no antecedent history of joint involvement.

The President referred to Dr. Jacoby's article, and asked whether the degeneration reaction had not been absent in his cases.

Dr. Jacoby replied that it had.

Dr. Birdsall added that, while this had also been the experience of Erb, in some of his own cases the degeneration reaction had been obtained.

Dr. Putnam Jacobi asked how the electric resistance had been measured.

Dr. Leszynsky replied that one electrode had been placed upon the hand and the other upon the back of the neck. In reply to the objections, he stated that there had been no antecedent history of joint trouble. At the time of the paralysis of the deltoid the patient could move the joint without pain. The suffering occurred in paroxysms, and with each paroxysm fresh paralyses developed. The circumflex was first affected, the paralysis of the deltoid occurring on the twelfth day, that of the supraspinatus and infraspinatus on the twenty-fourth day, and that of the triceps on the twenty-sixth day after a very severe attack of pain which required a large dose of morphine and chloral for its relief. Subsequently the subscapularis and teres major had been affected, and lastly the biceps, on the forty-fifth day of the disease. Repeated examinations of the condition of the joints had been made, and the possibility of joint affection had been excluded. The history was that of spontaneous degenerative neuritis. The picture responded completely to that in Allen's plates. The dorsal nerves had been unaffected. The electrical reactions of the ulnar and median also had been preserved.

Dr. Gibney had had the case under observation and had been unable to arrive at any decision in regard to it.

Dr. Starr asked for Dr. Gibney's opinion in regard to the lateral deviation of the spine.

Dr. Gibney thought that lack of muscular power and compensatory action would account for it.

Syringomyelia.—Dr. M. Allen Starr read a paper on this subject. Syringomyelia, he said, was a condition of the spinal cord in which abnormal cavities were present within the organ. The cavities were of two kinds. First, there was a dilatation of the central canal, constituting hydromyelia. Of this two specimens were shown, in each of which the cavity was easily seen by the naked eye and the complete epithelial lining was visible under the microscope. The tissue around the dilated canal was normal. Secondly, there was a destruction of elements of the spinal cord, constituting syringomyelia. The first stage of its pathology was the infiltration of the spinal cord near the central canal with round cells, connective-tissue nuclei, or gliomatous cells. A specimen showing this condition was exhibited. The next stage was the production of a felt-like connective tissue with numerous nuclei through the spinal cord, but especially near the central gray substance, pushing aside or destroying the medullary elements. This gliomatous mass had a tendency to break down in its center, leaving a fissure or cavity the walls of which were formed by the felt-like connective-tissue mass. The formation of such a cavity was the third stage of the pathological process. Specimens were shown illustrating these three stages, the specimens being from Schultze's cases and obtained partly from Schultze and partly from his pupil, Dr. Van Giesen. In some specimens the cavity was wholly independent of the central canal, which was pushed forward. In another the new cavity opened into the central canal, which appeared to have been dilated. In still others no trace of the central canal was to be seen. The gliomatous infiltration about the cavity was evident in all the specimens. The size of the cavity varied greatly, from a small fissure to a large cavity around which only a thin rim of medullary tissue remained. The cavity in some cases extended only through a few segments of the cord. In other cases it reached through its entire length. A diagram was shown representing its extent in a horizontal section of the spinal cord, the cord being divided into squares, and forty-eight cases being tabulated. The number of each case being placed in every square affected in the case, the greater number of squares numbered about the central area of the cord indicated the frequency with which this area was involved. The lower cervical and upper dorsal regions of the cord were the parts most frequently affected. The contents of the cavity were usually serous fluid, but they might be bloody or thick and hyaline. The clinical features of the disease were presented by means of a collection of typical cases accompanied by autopsies. They were found to be: first, progressive muscular atrophy with paralysis affecting some or all of the muscles of one limb and usually extending to the opposite limb and to the trunk, sometimes attended by reaction of degeneration in the paretic muscles; secondly, vaso-motor and trophic disturbances in the affected limb, consisting of cyanosis, coldness, bullous eruptions, ulceration and abscess, and even atrophy and fragility of the bones and a diminution in the excretion of sweat; thirdly, peculiar sensory disturbances consisting of the loss of the sensations of pain and of temperature in the atrophied part while the senses of touch, pressure, and location were preserved. The distribution of these symptoms in accordance with the situation of the lesion in the cord was then fully discussed. In half the cases cited the anterior horns had been involved and paralysis with atrophy been present. In two thirds of the cases the posterior horns had been involved and the peculiar sensory disturbances been observed. A case was then related in which the characteristic symptoms had been present and in which the diagnosis of syringomyelia had been reached by exclusion, all other forms of spinal disease having been shown to be impossible. The differential diagnosis from amyotrophic lateral sclerosis, tabes, anterior poliomyelitis, meningitis, intraspinal tumor, and neuritis was considered in connection with this case. The paper closed with a reference to the ætiology and treatment of the affection, regarding which little seemed to be known.

Dr. Shaw said that about five weeks previously he had been consulted by a German stevedore, who, by his occupation, was much exposed to cold. The patient's complaint was that he had been unable to feel and protect himself from anything hot. The anæsthesia was especially marked in the right hand, but was present to some extent in the other also. As in Dr. Starr's case, there had been a burn on the right arm near the wrist, for which the patient could not account. There was no ataxia and no atrophy. There were no pupillary symptoms, and the optic nerve was normal. It seemed to him that this might have been a case of cavity of the cord similar to those in the cases described. He inquired, however, whether the origin of the condition was invariable. Might there not, for instance, be a cavity in the cord from malacia secondary to caries of the spine?

Dr. Sachs had looked up the literature in connection with that of tumors of the cord, and he had also seen a number of cases diagnosticated by Schultze in Heidelberg. The clinical phenomena in Dr. Starr's case resembled those in Schultze's cases without doubt. He inquired, however, whether the diagnosis between syringomyelia and intramedullary tumor was not difficult, especially at an early date. The duration of the condition would give a decisive indication at a later stage, as intramedullary tumors seldom lasted so long as two or three years. The difficulty of diagnosis was further increased by the fact that the symptoms so much resembled those of progressive muscular atrophy that the sensory manifestations might easily be neglected in favor of this diagnosis.

Dr. Birdsall said that a number of cases had come under foreign observation, and it was but to be anticipated that similar cases would be found here. He recalled from his own experience three cases presenting motor symptoms of the atrophic type, vaso-motor and some sensory symptoms, which he thought might be due to cavity in the cervical portion of the cord; he had not yet arrived at an exact conclusion in the matter. There had been in these cases, too, a cessation in the advancement of the disease. More careful observations would, he thought, lead to less frequent diagnoses of the typical diseases. There would be found many combinations of symptoms which did not correspond to these types.

Dr. Booth also recalled a case of marked atrophy of the arm and hand with anæsthesia, so that burns were not felt.

Dr. Fisher asked whether any explanation had been advanced of the remissions, a marked feature in this disease. Was the absence of the reaction of degeneration a diagnostic sign; also would the sudden accession of paralysis from breaking down serve to distinguish the condition from that of progressive muscular atrophy?

Dr. Putnam Jacobi referred to the fact that in the cases cited a gliomatous tumor had served for the inception of the condition. She asked whether all cases of syringomyelia were referred to this origin. She also referred to the existence of vacuoles in the cord in pseudo-hypertrophic paralysis and in tetanus, and to the condition of porencephalia in the brain. In five cases of pseudo-muscular hypertrophy there had been found dilatation of the central cavity or cavities in the posterior horns, although the correlation of the lesion with the paralysis had not been established.

Dr. Peterson referred to a case at the Manhattan Hospital in which, in 1878, Dr. Seguin had diagnosticated cavity of the cervical enlargement of the cord. The patient had presented atrophy of the left hand and arm, with anæsthesia of the left arm, the thorax, and the left leg.

The President suggested that many cases diagnosticated as pachymeningitis should probably have been classed as cases of this disease. Dr. Starr had assumed that all cases of syringomelia were gliomatous in origin. Might there not be a formation of cavities from some other cause? He referred to a specimen in which similar cavities had resulted from a central myelitis. There had been two cavities in this case—one an inch and a half long, and the other not so large. Dr. Miller, of the University Medical College, had shown him the cord of an ox in which, too, there had been a large cavity without a surrounding infiltration.

Dr. Starr said that the stationary condition in his case could be explained by the fact of the glioma having broken down and advancement having ceased. The process had been arrested. It was not possible to diagnosticate between intramedullary tumors and syringomyelia, except, as had been suggested, by the duration of the case. The lesion had been discovered accidentally in all of the cases cited. The same had been true of multiple sclerosis on its first recognition. Then it had been diagnosticated by exclusion, all cases not presenting typical symptoms being referred to it. Now, syringomyelia received consideration also in the diagnosis of the anomalous cases. It might be of assistance to bear in mind that twenty-four out of the fifty-six cases had presented a cavity in the anterior, and thirty-two in the posterior part of the cord. The chances were therefore in favor of the symptoms of progressive muscular atrophy, or accidental analgesic areas. In the examination it was necessary to distinguish between analgesia, with loss of the temperature sense, and general anæsthesia. Intermissions were not uncommon in other conditions. In locomotor ataxia it was not uncommon for the symptoms to retreat, and the patient to get better for a time. He had seen the ataxia disappear, and return after several months. The reaction of degeneration did not appear to be an important diagnostic point. The majority of the cases had been diagnosticated as progressive muscular atrophy—a condition in which this reaction was not found. The condition of porencephalia referred to was a condition of childhood and fœtal life; he did not think that it was ever found in the adult. The ages of the patients with syringomyelia had been from twenty-five to forty years. In all of the cases observed the previous state had been that of infiltration with gliomatous cells. Destruction did not occur during this stage; the elements of the cord were simply displaced.

Book Notices.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, A. M., M. D., Professor of Skin and Venereal Diseases in the Medico-chirurgical College and Hospital of Philadelphia, etc. With Colored Plates and Other Illustrations. New York: D. Appleton & Company, 1888. Pp. viii–633. [Price, $5.]

For a number of years the author of this work has been well known to the medical profession as a prolific writer, an enterprising worker in dermatology, and an ardent therapeutist. How much he has written is apparent from the fact that no fewer than twenty-nine of his own papers are referred to in this book. His experience as a teacher has taught him what most medical men want to know about skin diseases, and has aided him in presenting his subject in so practical a manner that the book can not fail of being very useful to the general practitioner of medicine. We know of no treatise on dermatology which is fuller than this one in suggestions as to treatment. Just here lies, we think, the strong point of the book; and just in this direction we believe that Dr. Shoemaker intended to put forth his best effort. Symptomatology is also well presented; diagnosis is usually excellently given, and pathology concisely.

In special criticism we would offer the following: Diet is said to be quite as important as medicine in the treatment of skin diseases; but little special attention is given to it in the work. Oatmeal and buckwheat are condemned (upon what grounds is not stated), as giving rise to pruritus, erythema, and eczema. The author's idea of diet seems to be embodied in the oft-repeated formula, "meat, milk, eggs, and fruit." In the therapeutics we note the high praise given to the administration of medicines hypodermically on account of the great promptness of their action. Arsenic, mercury, and cod-liver oil are used in this manner in cases in which they are indicated. This plan may be serviceable in hospital practice, but we doubt if private patients could be induced to call on their physicians every day to have their skin punctured, to say nothing of paying their fee daily. Chlorate of potassium is recommended in pustular and scrofulous diseases. The oleates are treated of at length, five pages being devoted to their consideration. The treatment of the various diseases of the skin is given very fully, though of some of them it is meager. Epilation in favus and ringworm is regarded as "injurious to the hair follicle, painful to the patient, and a relic of medical barbarism of the last century." Instead of epilating, the use of the oleate of copper or of mercury is commended, the first being considered the most valuable of antiparasitics. We fail to find mention either of acne frontalis or of dermatitis herpetiformis, and the ulcerative scrofuloderm secondary to enlargement of the lymphatic glands is regarded as the only scrofuloderm. In the pathology of the diseases of the skin we are surprised to find no mention of the recent bacteriological discoveries of the Germans; for instance, no notice being taken of the *Staphylococcus aureus* and the *Staphylococcus albus* as active factors in the production of pustular diseases.

The book is furnished with an admirable index of twenty-three pages, and a formulary of fifty-nine pages which is conveniently arranged, and contains a list of medicated plasters and soaps not readily accessible elsewhere. Typographical errors are very few. The illustrations are not very numerous. The wood-cuts are generally good, though it would be difficult to tell whether the man upon page 166 had a pustular eczema or, what was intended, a tubercular syphiloderm. The lithographs are not artistic. The man figured in the plate of rosacea has no neck, and his head is sliding off from his coat collar. The blue color of the hand affected with eczema has never been seen by us in that disease. But these flaws are of small moment in comparison with the many excellences of the work. We congratulate the author upon it, and we have no doubt but that the book will take a high rank among the text-books upon dermatology.

BOOKS AND PAMPHLETS RECEIVED.

A Treatise on Dislocations. By Lewis A. Stimson, B. A., M. D., Professor of Clinical Surgery in the University of the City of New York, etc. With One Hundred and Sixty-three Illustrations. Philadelphia: Lea Brothers & Co., 1888. Pp. xx–17 to 539. [Price $3.]

Dissolution and Evolution and the Science of Medicine: An Attempt to Co-ordinate the Necessary Facts of Pathology and to Establish the

First Principles of Treatment. By C. Pitfield Mitchell, Member of the Royal College of Surgeons, England, etc. London: Longmans, Green, & Co., 1888. Pp. xvi–246.

A Compend of Human Physiology. Especially adapted for the Use of Medical Students. By Albert P. Brubaker, A. M., M. D., Demonstrator of Physiology in the Jefferson Medical College, etc. Fourth Edition, revised and enlarged. With Illustrations and a Table of Physiological Constants. [Quiz Compends, No. 4.] Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 174. [Price, $1.]

Accidents and Emergencies. A Manual of the Treatment of Surgical and other Injuries in the Absence of a Physician. By Charles W. Dulles, M. D., Fellow of the College of Physicians of Philadelphia, and of the Academy of Surgery, etc. Third Edition, revised and enlarged. With New Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 123. [Price, 75 cents.]

Guide to the Health Resorts in Australia, Tasmania, and New Zealand. Edited and compiled by Ludwig Bruck, etc. Centennial Edition. "Australian Medical Gazette," 1888. Pp. 183.

The Pathology of Hay Fever. By S. S. Bishop, M. D., of Chicago. [Reprinted from the "Journal of the American Medical Association."]

A Letter to the Registrar-General on the Increase of Cancer in England and its Cause. By John Francis Churchill, M. D. London: David Stott.

Notes on Tobacco-Amblyopia. By Edgar A. Browne, F. R. C. S. E., etc. [Reprinted from the "Liverpool Medico-chirurgical Journal."]

An Address on the Treatment of the Gouty Constitution. By I. Burney Leo, M. D., F. R. C. P., etc. [Reprinted from the "British Medical Journal."]

The Neural and Psycho-neural Factor in Gynæciac Disease. By C. H. Hughes, M. D., etc. [Reprinted from the "Alienist and Neurologist."]

Should Physicians be Pharmacists? By Charles L. Mitchell, M. D. [Reprinted from the "Philadelphia Medical Times."]

Dr. G. Beck's therapeutischer Almanach, 15. Jahrgang, 1888, i. Semester. Bern: Schmid, Francke, & Co, 1888. Pp. 60.

Reports on the Progress of Medicine.

SURGERY.

By MATTHIAS L. FOSTER, M. D.

Surgery of the Urinary Organs.—Mr. Harrison, in his lectures before the Medical Society of London ("Brit. Med. Jour.," Jan. 7–21, Feb. 4, 1888), objects to the term urethral fever, as misleading, inasmuch as it seems to connect the symptoms with the precise part rather than the process by which they are produced. He proposes the term "urine fever," as it is produced by the presence of urine in a recent wound, and is probably due to the absorption of some poisonous compound, such as an alkaloid, which is derived either from urine or tissue or wound decomposition, or all combined. This he bases on the following: "1. The presence of urine in relation with a recent wound is necessary for the production of urine fever. 2. The mere contact of urine with a wound is not sufficient for its production. 3. The retention of fresh urine within the area of a recent wound is almost invariably followed by its development in a greater or less degree. 4. Where urine is placed under such circumstances as last mentioned, the liability to urine fever is greatly diminished when it is sterilized by local or general means. 5. The retention of fresh urine, blood, and the *débris* of damaged tissue in the confines of a recent wound for a certain time, at a temperature of about 100° F., could hardly be possible without chemical changes taking place in the constituents referred to. 6. The common origin for urine fever is rendered probable by the uniformity of symptoms attending it, which are identical, whether following a surgical operation or an accidental wound." Certain drugs, by their elimination through the urine, such as quinine, seem to render it less capable of exciting this fever.

Strictures of the urethra he holds to be due to inflammatory exudation thrown out to resist leakage of some of the constituents of the urine through the mucous membrane of the urethra, where from any reason the epithelium is damaged so as to render the canal not urine-tight. Among his reasons for believing this are the secondary implication of the mucous membrane in the stricture-forming process, the density and contractility of the plastic exudation, the character of the cicatrix produced in the healing of a recent wound constantly submitted to the action of more or less pent-up urine, and the form in which the stricture tissue is deposited. After rupture of the urethra, formation of a stricture can, he maintains, be prevented by performing perineal section and preventing the infection of the wound with urine.

Regarding the prostate, he considers it the muscular retentive apparatus of the male bladder, and that its intermittent glandular action is subservient to this continuous physical action. Its fibers are spread out like a funnel, with the apex downward, forming a strong support for the bladder. In the adult man an exceptional degree of pressure is made upon the outlet of the bladder, as the perpendicular axis of the "urine pressure" falls directly upon the outlet, and not partly on the pubic bone, as in the female. Where there are no such physical functions to perform, as in extroversion of the bladder, the prostate as a muscle exists only in a rudimentary form, though the sexual sense may be normal. Hypertrophy first appears for a distinctly conservative object. Projecting nodules he considers structural upheavings of a frequently contracting muscular ring developing in the line of least resistance, and assuming a more lowly organized form than that which was in the first instance developed. To prevent prostatic hypertrophy, and the complications arising from it, care should be systematically taken to preserve the muscular power of the bladder, and to aid it artificially when necessity arises. The timely use of the catheter he warmly commends as warding off changes which unfortunately do not always cease when they have become precisely compensatory.

Recurrence after litholapaxy he places at one in seven. This is the weak point of the operation. He ascribes this largely to the condition of the bladder, which is often in a state of chronic inflammation, predisposing to the deposit of phosphates. As in such cases the calculus is the result rather than the cause of the trouble, he advocates their treatment by lateral lithotomy and drainage of the bladder, with careful cleansing for from four to ten weeks, in order to restore the mucous membrane to a healthy condition.

Washing out the Ureters and the Pelves of the Kidneys through the Bladder.—The same author ("Lancet," March 10, 1888) narrates two cases presenting symptoms of nephritic calculus in which, after determination of the absence of any calculus in the bladder, that viscus was filled with tepid water, and pressure made upon it with the evacuator employed in litholapaxy. After a few manipulations, small pieces of calculus appeared. One patient stated that he felt something "moving in his back." He was led to consider the possibility of distending the ureters in such a case, a proceeding impossible in the normal condition, by observing the destruction of the provision to prevent regurgitation in cases of obstruction from stricture and prostatic enlargement, together with the damage done to the valve-like arrangement of the ureters by the passage of calculi.

Vesical Tumors.—Sir H. Thompson, in his recent lectures on vesical tumors ("Brit. Med. Jour.," Jan. 7–14, 1888), adds little or nothing to what he has already advanced upon this subject. He refers to the danger of death from hæmorrhage in cases of papillomata of the bladder, the so-called villous growths, the most common of vesical growths. Simple mucous polypi, myomata, and dermoid tumors are rare, as are also scirrhus and sarcomata. Epitheliomata are more common. He favors the suprapubic operation, reserving the perineal for exploration in those cases in which microscopic evidence of the presence of papilloma is absent, but in which the symptoms strongly indicate it. If the extent and physical characters of the tumor thus found indicate a better chance of removal by the suprapubic method, he advocates its immediate employment, the perineal incision not interfering with the distension of the bladder.

Rare Misplacement of the Testis.—Maynard ("Brit. Med. Jour.," Jan. 28, 1888) reports this unusual condition as found in a boy sixteen years old. One inch below Poupart's ligament on the right side, at the superior internal angle of Scarpa's triangle, over the saphenous opening, there was a tumor which exhibited the characteristics of a testicle on examination. The examination was followed by an attack of inflammation like orchitis, and then a cord could be felt running from the tumor to the perinæum. The left testicle was found alone in the scrotum. The patient declined an operation.

Suprapubic Prostatectomy.—McGill ("Lancet," Feb. 4, 1888) describes three forms of prostatic enlargement projecting into the bladder—a uniform circular projection surrounding the internal orifice of the urethra, a sessile enlargement of the middle lobe, and a pedunculated enlargement of the middle lobe. The first variety is the more common. The projection acts as a valve which closes the urethra the more tightly the more intravesical pressure is made. To remedy this he recommends opening the bladder above the pubes and removing the projection. This is easily done in the second and third varieties, but in the first the operation is more difficult. He divides the ring longitudinally with scissors, one blade being passed into the urethra, and then removes the halves separately. Care must be taken not to leave any portion of the projecting valve untouched. Cicatricial contraction seems to be eccentric in character, so that the urethral orifice is rather enlarged than diminished by it.

Operations on the Joints.—In the Journal for November 26, 1887, there was a short account of an operation proposed by Tiling to preserve the ligaments about the knee joint in resection. Since that time he has developed his idea and put it in practice. In an article in the "St. Petersburger med. Wochenschrift," Nos. 33–34, 1887, he describes the operation as applied to the shoulder, elbow, hip, knee, and ankle joints.

In resection of the knee joint the skin incision is bow-shaped, beginning below and in front of one epicondyle, passing below the tuberosity of the tibia, and ending above and in front of the other epicondyle of the femur. The incision should be deepened on each side between the lateral ligaments and the ligamentum patellæ into the joint. The periosteum below and on each side of the tuberosity should then be divided, and the tuberosity having the attachment of the patellar ligament should be removed with a chisel 3 ctm. broad, directed upward and backward. The piece of bone removed must be at least 1 ctm. thick at its upper part. If the joint is now laid open by lifting up the chiseled-off tuberosity with the patella and patellar ligament, the points of insertion of the lateral ligaments into the epicondyles of the femur can be seen; or, if the first incision started in front of the epicondyles, they can be felt by passing the finger along the anterior borders of the lateral ligaments. The external is much less prominent than the internal epicondyle. The periosteum about these should be incised, and they should be removed with the broad chisel, 1 to 1½ ctm. in thickness being taken away. The joint can now be opened if the crucial ligaments are divided, as is usually done, as widely as by any other operation, and the extirpation of the diseased tissues can be proceeded with. After this has been done the epicondyles and the tuberosity of the tibia are replaced and secured with ivory pegs. The drainage and dressing are as usual. By this means three ligaments are preserved for the knee, which will be of indubitable value when a movable joint is obtained. The quadriceps extensor seems also better prepared to antagonize contracture of the flexor muscles than it is after any other operation. He has performed the operation on five patients.

Hip Joint.—To apply the same principle at the hip joint, Tiling makes an incision nearly parallel to Langenbeck's incision, carried down to the anterior border of the trochanter major. This is chiseled away with the muscles inserted into it, the chisel being directed from before backward, because no muscles come to it from in front for insertion. The trochanter and attached muscles are then laid backward, exposing the joint. After longitudinal division of the capsule and elevation of the periosteum of the neck of the femur the bone can be luxated and the trochanter minor struck off. The entire joint is then freely open. After removal of the diseased tissues the head of the femur, or, if this has been cut away, the rounded end of bone, is to be replaced in the acetabulum and the trochanter major fastened in its normal place with ivory pegs. To secure the trochanter minor in like manner is impracticable. One operation is reported.

Ankle Joint.—At the ankle joint the operation becomes quite complicated. Curved incisions are made on each side of the joint from the border of the tendons to the posterior borders of the tibia and fibula. Through these the astragalo-tibial joint is opened in front, the periosteum is cut through, and the malleoli are chiseled away at the level of the lower horizontal cartilaginous surface of the tibia. In all these steps care has to be taken to avoid wounding the sheaths of the tendons about the joint. On retracting the malleoli and connected tissues, the lateral and anterior portions of the joint are in view and convenient for removal of diseased tissues. But this is not true for the posterior portion of the joint. Tiling pronounces this part of the operation to be slow and difficult, especially in the lower portion, and leaves the details to the ingenuity of the operator. To get at the upper part of the posterior portion of the joint, he elevates the periosteum from the posterior surface of the tibia, partially luxates the astragalus backward, and retracts the soft parts. After removal of a diseased astragalus this difficulty does not exist. After the diseased parts have been removed, the malleoli can be replaced as before with ivory pegs. Two cases are given in which this operation was performed.

Shoulder Joint.—At the shoulder he proposes an incision from the outer border of the coracoid process toward the shaft of the humerus, and then directly outward about 10 ctm. This incision he carries only through the deltoid muscle, forming a flap, which is turned up, exposing the greater and lesser tubercles, which are chiseled off, and the tendon of the biceps, which is removed with the periosteum from its groove. The capsule is incised, the parts are retracted, and the joint is open. This operation he has not yet performed.

Elbow Joint.—At the elbow joint the triceps is divided two or three fingerbreadths above the point of the olecranon, and both epicondyles, with the muscular and ligamentous insertions, are chiseled off. These are drawn into the flexure of the joint, the radius and ulna are separated from the humerus, and the joint is thoroughly exposed. The remaining details are now familiar. This operation he has performed twice.

Erasion of the Knee Joint.—Shield ("Ann. of Surg.," Feb., 1888) urges the recognition of this term as applying to operations for removal of diseased tissues from the knee joint which are not sufficiently extensive to be worthy the name of excision. He finds great difficulty in producing an exact definition of the term, but describes the ideal operation as "opening the joint by such incisions as render free access to every part of its interior. Every fragment of unhealthy synovial tissue must be carefully removed. Diseased cartilage is to be pared away, and any carious bone removed with a gouge. After this the limb is fixed upon a splint, and the bone ends are sutured or not." It is then a modified excision, in which the cut surfaces of bone are smaller, the reparative process less severely taxed, the subsequent growth of bone less interfered with, and the operation is not more extensive than the local disease demands.

[We have an unfortunate superabundance of synonyms in the nomenclature of operations on the joints—terms once perhaps distinct, but which can now scarcely be said to have a shade of difference in meaning: Excision, exsection, resection, arthrectomy, and now erasion. The present writer makes arthrectomy synonymous with erasion. Tiling says, "Arthrectomie resp. Resection." That a distinct term is needed to designate the milder operation is evident, but its definition should be plainly made, and it should be held as not synonymous with any term which is considered by another writer synonymous with the term designating the severer operation.]

Luxation of the Head of the Radius forward. — Radestock ("Deutsche militarärztl. Zeitschrift"; "Ctrlbl. f. Chir.," No. 3, 1888) decides, as a result of a series of experiments on the cadaver, that this injury results usually from forced pronation, the ulna at the point of crossing forming a fulcrum, and the head of the radius being forced forward through the anterior portion of the capsule. Less frequently it may be produced by forced supination, the pressure of the bone lacerating the external lateral ligament and causing luxation outward. If the hand is then pronated, the luxation is changed from outward to forward. The annular ligament is torn, or the coronoid process of the ulna is torn off, and in either case the annular ligament is apt to interfere with the reduction of the luxation by interposing itself between the surfaces of the joint. To obviate the hindrances to reduction, the writer recommends active and passive motion of the joint, combined with massage. If a sufficiently good result is not obtained in this manner, the head of the radius may need to be resected.

Dislocation of the Radius and Ulna inward.—An example of this rare accident is recorded in the " Brit. Med. Jour. " for March 3, 1888, by Dr. Sinclair. The patient was thrown from a carriage and alighted on the olecranon of the left arm. The forearm was, when seen shortly afterward, midway between pronation and supination, flexed at the elbow to an angle of 135° and bent to the ulnar side. The head of the radius had great freedom of movement. The greater sigmoid cavity of the ulna articulated with the under surface of the internal condyle. Pain was severe, probably from pressure on the ulnar nerve. Reduction was easy by placing the knee against the upper part of the forearm, extending and then flexing the joint while the forearm was lifted outward.

Interphalangeal Dislocations.—Middleton (" Ann. of Surg.," Jan., 1888) describes four cases of these dislocations, which are rare and frequently difficult to reduce. He thinks that " in simple dislocations the best means to obtain replacement is direct pressure exerted by means of the thumbs on the dislocated part, and, failing to reduce in that manner, tenotomizing the extensor tendons, for it is only in dislocation backward that there is any difficulty in reduction, forward dislocation being impossible unless compound, in which case the extensor tendon is always torn." He favors tenotomizing also on account of the rest it affords the parts. In compound dislocations, when the cartilages are injured, he advises the removal of as much of the cartilaginous surface as possible.

Dislocation of the Thumb forward.—Simson (" Brit. Med. Jour.," Feb. 11, 1888) reports a dislocation of the first phalanx of the thumb forward, so that the base of the bone reached nearly to the center of the palm. Here it was held tightly by the two heads of the flexor brevis pollicis in the same manner as the head of the metacarpal bone is held in the common backward dislocation. Reduction was difficult, and was finally accomplished by placing the fingers of both hands on the dorsal aspect of the joint, holding the muscles forward and to the center of the palm; then, both thumbs being applied to its base, the phalanx was pressed upward and to the radial side, when the bone slid easily into place. This injury is of very rare occurrence.

Gangrene of the Hand after Fracture of the Radius.—Merkel records a case (" Ctrlbl. f. Chir.," 1888, No. 5) in which a simple fracture of the radius, which had been reduced and treated in the ordinary manner, was followed by gangrene of the hand, which necessitated amputation fourteen days after the accident. Several loose splinters of bone were found to have been driven into the soft parts, and these seem to have compressed the blood-vessels. This could not be demonstrated, however, on account of the decomposition of the soft parts.

Flat-foot.—Smith (" Practitioner," Jan., 1888) recommends arching the foot as much as possible by manual pressure during the setting of a plaster-of-Paris bandage. The sole of the foot can be bent over a small sand-bag or other firm pad. The sole should also be slightly inverted while molding the foot in the bandage. A few days' absolute rest is advisable both before and after the application of the bandage. The length of time during which the bandage must be kept on must vary with circumstances.

Abortive Treatment of Syphilis.—Mr. Hutchinson states that in his recent experience when mercurial treatment was begun early for the indurated chancre no secondary symptoms followed, although tertiary symptoms might develop (" Brit. Med. Jour.," Feb. 25, 1888). He defines the stages of the disease as primary before the blood becomes contagious, secondary while it is contagious, and tertiary after the contagiousness has ceased. Mercury is to be given in small doses and for a long period of time. To prevent the tertiary stage it might be necessary to use it before there was any infection of the blood—*i. e.*, probably before the induration of the sore and adjacent glands.

Retropharyngeal Abscess.—Burckhardt (" Ctrlbl. f. Chir.," No. 4, 1888) advocates an external incision along the inner border of the sterno-mastoid, passing down by the inner border of the sheath of the carotid vessels, as preferable to the usual operation through the mouth. He maintains that many difficulties of the operation and after-treatment can thus be done away with, and that probably the mortality, which he acknowledges to be slight, will be lessened by the adoption of this rather formidable operation.

Turpentine as an Antiseptic.—The enthusiastic statements of Grawitz and De Bary, as reviewed in the Journal for Feb. 11, 1888, regarding the antiseptic value of oil of turpentine, are denied by von Christmas-Dirckinck-Holmfeld (" Ctrlbl. f. Chir.," 1888, No. 3), who professes to have demonstrated by a series of experiments that oil of turpentine is not a germ-destroying agent of the first rank, and that, in comparison with corrosive sublimate and carbolic acid, so far from being their superior, it is by no means their equal. Several varieties of micro-organisms grow well after immersion in oil of turpentine for several hours.

Treatment of Carotid Hæmorrhage.—Treves (" Lancet," Jan. 21, 1888) is of the opinion that the ligature of main arteries to arrest bleeding in distant parts is often somewhat blindly advised and possibly too frequently carried out. The value of temporary compression of the main artery for such hæmorrhage has been demonstrated in the limbs, hence he suggests its application in the neck by exposing the artery and loosely tying around it a thick piece of soft catgut. By pulling upon the loop the circulation through the vessel is arrested, but is at once restored when the tension upon the loop is relaxed.

Excision of the Tongue.—Whitehead (" Lancet," Jan. 28, 1888) strongly advocates complete removal of the tongue with scissors through the mouth, in cases of cancer, as preferable to any other mode. Preliminary laryngotomy he does not favor, as he thinks it entails a new and unnecessary element of danger. Hæmorrhage he does not consider as severe as it frequently is after removal by the écraseur. Arterial hæmorrhage is stopped by torsion. After the removal, the raw surface is washed with a solution of the bichloride of mercury, and then painted with an antiseptic varnish, which dries immediately, leaving a firm coating on the wound. The varnish is composed of the ordinary ingredients of Friar's balsam, substituting a saturated solution of iodoform in ether for the alcohol. Patients are allowed out of bed and to take food the day following the operation. Open-air exercise, weather permitting, is allowed on the second day. When the entire tongue is removed, the patient can eat and speak better than when only a portion has been taken away. He takes the opportunity of disclaiming any knowledge of the gag figured as his and known by his name. He prefers Mason's gag to any other.

Empyema.—In order to avoid the admission of air into the pleural cavity during the operation for empyema, Rochelt suggests the following method (" Wiener med. Presse " ; " Ctrlbl. f. Chir.," 1888, No. 1). He makes an incision in the usual manner down to the pleura, or removes a portion of a rib subperiosteally, and then plunges a trocar and cannula into the pleural cavity. Through this cannula he introduces a tube filled with an antiseptic solution and connected with an aspirator. The pus is then removed, and the pleural cavity washed out with a sublimate solution. After this he cuts off the tube at the level of the mouth of the cannula, and inserts into it a hard-rubber tube, one centimetre long, having a valve at the inner end, which closes at each inspiration, but opens on expiration to allow escape of pus and prevent the entrance of air. The external wound is then sutured and an antiseptic dressing applied.

Thoracoplasty.—This operation Mr. Gould has performed upon four patients with two successes, one partial success, and one death (" Lancet," Feb. 11, 1888). To meet the demands of cases of empyema which do not heal in spite of long-continued free drainage, in which the compressed lung has expanded as much as possible, the mediastinum has been displaced, the diaphragm has risen, and the chest-wall has fallen in until the ribs are in contact, and there yet remains a space which it is impossible to occlude by granulations, Estlander devised the operation of thoracoplasty, which consists of excising all of the ribs lying in the wall of the empyema and removing the thickened pleura. Mr. Gould does not employ the method of exposing the ribs to be excised by a flap, as recommended by Mr. Godlee, but finds a single vertical incision through skin and muscles down to the ribs sufficient. Hæmorrhage may be considerable. The operation is very severe and is justifiable only in such desperate cases as above described and when demanded to save life. Serious visceral disease or a very low condition of the patient's vital powers contraindicates the operation.

Miscellany.

The Medical and Pharmaceutical Congresses of Barcelona.—In conjunction with the *Exposición Universal*, a medical congress and a pharmaceutical congress will be held in Barcelona, from the 9th to the 15th of September. The following-named subjects are announced for discussion in the general sessions of the medical congress: 1. The epithelial tissue considered as a system, and its importance in physiology and in pathology. 2. The intimate working of the nervous system. 3. Antisepsis in general. How do antiseptics act. 4. The contagiousness and prophylaxis of tuberculosis. 5. The way to reconcile the spirit and the letter of penal law with the present state of phrenopathy. 6. The relative part played by the nature of parasitic micro-organisms, the state of the individual, that of the tissue, and that of the region affected in producing variations in morbid processes of parasitic origin. 7. Hypnotism and suggestion from a governmental point of view. 8. In the present state of science, should the time required for recovery from injuries (in the medico-legal sense of the word) and their results count on a penal sentence? Is it advisable to form a medico-legal classification of injuries in the light of contemporary surgery? 9. Governmental measures proper to be adopted in Spain for preventing and remedying blindness and for ameliorating the physiological, moral, and social condition of the blind. 10. The present state of leprosy in Spain, and measures to prevent its spread. 11. The history of Catalanian medicine. For the Section in Medicine, the announcements are as follows: 1. Antisepsis in internal medicine. 2. The antipyretic treatment; its indications and contra-indications. 3. The ætiology and pathogeny of pneumonia. 4. The treatment of tuberculosis. 5. The precise indications for surgical interference in intestinal obstruction. 6. The part played by non-cardiac diseases in the production of asystolism. 7. The indications for surgical interference in pleural and pulmonary diseases. 8. The pathogeny of puerperal eclampsia. 9. The pathogeny and treatment of the intestinal catarrhs of children. 10. The identity or duality of scrofula and tubercle. 11. The distinction between the encephalic diseases of children. 12. When is it possible to localize diseases of the nervous centers? 13. The part played by syphilis in causing mental affections. 14. The applications of hypnotism and suggestion to the treatment of nervous diseases. 15. Is the general paralysis of the insane always incurable? 16. The micro-organisms of mineral waters; their influence on the chemical nature and the effects of the waters. 17. Does the nitrogen of mineral waters act by virtue of its withdrawing the organism from the action of oxygen or by some property of its own? 18. What part do galvanic and faradaic currents play in the treatment of diseases of the spinal cord, either on the seat of the disease or on the system? For the Section in Surgery the programme is as follows: 1. The modifications of the present doctrines of the origin of tumors made necessary by modern micro-biological studies. 2. An attempt having been made to remove a projectile from a gunshot wound, in what cases should it be given up and recourse be had to antiseptic dressing? 3. Is exploratory laparotomy justifiable in cases of penetrating wounds of the abdomen? 4. The law of accommodation in the mechanism of labor, and its results. 5. Obstetric antisepsis. 6. Involution (retraction) of the uterus, and the causes that may interfere with it. 7. The treatment of prolapsus uteri. 8. The surgical treatment of uterine cancer. 9. The comparative value of asepsis and antisepsis in ophthalmic surgery. 10. What method of extraction of cataract is generally preferable? 11. What modifications does our present knowledge of surgery call for in the treatment of wounds in the country? 12. What is now understood by herpetism? 13. Is mutilating leprosy a trophoneurosis? 14. Is syphilis transmissible to the lower animals? If it is, at what time, in what order, and in what manner do the manifestations corresponding to the different periods show themselves? Is there ground for the hope of accomplishing the attenuation of the syphilitic virus? 15. Lupus; its nature and treatment. 16. The value of electricity in the treatment of joint diseases. The following-named subjects are to be discussed in the Section in Hygiene and Demography: 1. The ætiology and prophylaxis of yellow fever and cholera. 2. The ætiology and prophylaxis of indigenous infectious diseases. 3. Practical measures for restricting the development of pathogenetic cryptogams. 4. Is the right of society to protect itself against contagious diseases absolute, or should something be yielded to the right of the sick person? What should be the line of demarkation between the two? 5. The influence of density of population on the health and longevity of individuals. 6. The origin, polymorphism, and heteroicity of microbes. 7. The chemistry of the diastases. 8. Do the modern buildings of Barcelona conform to the teachings of hygiene? If they do not, what changes should be made in houses already built, and what rules should be followed in building? 9. The physical and chemical differences in the same article of food coming from different parts of Spain.

The late Dr. Agnew.—At the last meeting of the Board of Governors of the New York Skin and Cancer Hospital the following preamble and resolutions were passed:

Whereas, By the hand of an overruling Providence this institution has lost in Dr. Cornelius Rea Agnew one of its original incorporators and an earnest supporter, as well as an efficient consulting surgeon,

Resolved, That the Board of Governors of the New York Skin and Cancer Hospital desire to express their profound admiration of the peculiar and noble traits of character possessed by Dr. Agnew, and the very great loss which the institution has sustained in his early removal from our midst.

Resolved, That this preamble and resolution be entered upon the records of the institution, and that a copy be sent to the family of Dr. Agnew and to the medical journals.

The late Dr. Loring.—At a special meeting of the Board of Surgeons of the New York Eye and Ear Infirmary, held May 2, 1888, the following resolutions were adopted:

Resolved, That in the sudden death of Dr. Edward Greeley Loring, Jr., the surgical staff of the New York Eye and Ear Infirmary have lost an able and skillful colleague, who for nearly fourteen years has been a surgeon in the Ophthalmic Department of the institution. His kindly and lovable personal qualities were most attractive, and in his death we feel keenly the loss of a genial, frank, and warm-hearted friend. In his professional attainments he was most eminent, enthusiastic in his devotion to his special field of work, and, as one of its most distinguished exponents, he was justly esteemed an authority. We greatly deplore the cessation of his labors, while still in the full enjoyment of his powers, which were enriched by a large and carefully digested experience. As an author he was remarkable for his acute observation and logical reasoning, while the clearness of his style gave evidence of the directness of his thought. By his death scientific ophthalmology has lost an ardent and successful disciple, while the community has been deprived of the services of a skillful counselor and practitioner. The surgeons of the New York Eye and Ear Infirmary desire thus to give expression to their feeling of affection and respect for his memory, and sympathizing sincerely with his family in their loss, offer them their respectful condolence.

Resolved, That this minute be entered on the records of the Board of Surgeons of the New York Eye and Ear Infirmary, and that a copy be sent to the family of Dr. Loring.

[Signed.] Charles Stedman Bull,
Gorham Bacon,
Morris J. Asch,
Committee.

The New York Academy of Medicine.—The Section in Surgery meets on Monday evening, the 14th inst. The programme includes "Personal Experience with Electrolysis in the Treatment of Urethral Stricture," by Dr. F. Tilden Brown, and "On the Treatment of Fractures of the Lower End of the Humerus," by Dr. C. A. Powers.

The Section in Theory and Practice of Medicine meets on Tuesday evening, the 15th inst. Dr. T. H. Burchard will read a paper on "The Therapeutic Value of the Saratoga Waters," and Dr. W. B. Wood will read one on "Recent Clinical Results of the Pneumatic Cabinet."

Hoff's Malt Extract.—Mr. Leopold Hoff, of Hamburg, the proprietor and manufacturer of Hoff's malt extract, is now in this country, and we learn that he will stay for some time. Mr. Hoff will be remembered as having introduced Hoff's malt extract into the United States in 1866, at which time his energy, the co-operation of a number of prominent New York physicians, and the excellence of the preparation led to its very extensive use, so that at the present time the agents, Messrs. Tarrant & Co., report that they are importing larger quantities each year. It is announced that Mr. Hoff has recently been elected a Fellow of the Royal Society of Science and Art, of London, by which a gold medal has been awarded to him.

Preliminary Announcement of the Committee of Arrangements of the Congress of American Physicians and Surgeons.—This association will hold its first triennial session in Washington, on the 18th, 19th, and 20th of September. The meetings of the congress will be held in the evenings, beginning at 8 P. M., and those of the societies composing the congress will be held during the daytime, according to the programme each may respectively provide. The sessions will be open to the profession. The Local Committee of Arrangements of the congress has secured places of meeting for the congress and each society in close proximity, so that the members of the respective societies can interchange attendance at pleasure, without inconvenience. It is the purpose of the Executive Committee of the congress to print the programmes of all of the societies, provided copies are supplied on or before August 15th. The Local Committee requests the secretaries of the societies to forward the names of those of their invited guests who have accepted their invitations, designating them as foreign and American. The Committee of Arrangements is composed of one member of each society represented in the congress, as follows: Dr. Samuel C. Busey, Association of American Physicians, Washington; Dr. J. Ford Thompson, American Surgical Association, Washington; Dr. R. T. Edes, American Neurological Association, Washington; Dr. E. C. Morgan, American Laryngological Association, Washington; Dr. W. W. Johnston, American Climatological Association, Washington; Dr. I. E. Atkinson, American Dermatological Association, Baltimore; Dr. A. Sydney Roberts, American Orthopædic Association, Philadelphia; Dr. H. Newell Martin, American Physiological Society, Baltimore; Dr. Samuel Theobald, American Ophthalmological Society, Baltimore; Dr. S. O. Richey, American Otological Society, Washington; Dr. A. T. Cabot, American Association of Genito-urinary Surgeons, Boston. Inquiries may be addressed to the chairman, Dr. Busey, at Washington, or to the representative member of each society on the committee. The Committee of Arrangements of the American Gynæcological Society, which will hold its next annual meeting in Washington at the same time, is composed of Dr. Busey, Dr. Taber Johnston, and Dr. King.

The Health of the State of New York.—According to the State Board of Health's "Monthly Bulletin," for March, 9,405 deaths were reported during the month, including in each thousand 11·20 from diarrhœal diseases, 8 from typhoid fever, 25·50 from scarlet fever, and 71·32 from diphtheria.

The Health of Michigan.—According to the State Board of Health's summary of returns for the month of April, diphtheria was reported from 20 places, scarlet fever from 43, typhoid fever from 15, and measles from 45.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending May 3d:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending April 14th corresponded to an annual rate of 21·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Portsmouth, viz., 16·8, and the highest in Manchester, viz., 34·9 in a thousand. Small-pox caused 11 deaths in Sheffield, 3 in Blackburn, 1 in Bristol, and 1 in Manchester.

London.—One thousand six hundred and ninety-two deaths were registered during the week, including measles, 12; scarlet fever, 17; diphtheria, 19; whooping-cough, 108; enteric fever, 9; diarrhœa and dysentery, 19. The deaths from all causes corresponded to an annual rate of 20·6 in a thousand. Diseases of the respiratory organs caused 444 deaths; different forms of violence, 52; and 9 suicides were registered. In greater London 2,075 deaths were registered, corresponding to an annual rate of 19·6 in a thousand of the population. In the "outer ring" 18 deaths from whooping-cough; scarlet fever, 5; diphtheria, 10, and measles, 5, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending April 14th in the sixteen principal town districts of Ireland was 26·9 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 9·6, and the highest in Lurgan, viz., 46·2 in a thousand. In Dublin 187 deaths were registered, including 7 from whooping-cough; measles, 3; scarlet fever, 1; typhus, 1; and enteric fever, 2.

Scotland.—The deaths registered in eight principal towns during the week ending April 14th corresponded to an annual rate of 20·8 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 14·7, and the highest in Perth, viz., 30·4 in a thousand. The aggregate number of deaths registered from all causes was 526, including 5 from measles; scarlet fever, 4; diphtheria, 3; whooping-cough, 20; fever, 8; and diarrhœa, 9.

Buenos Ayres.—The United States consul, in his dispatch dated March 1, 1888, inclosed a copy of a report on the health and hygienic condition of Buenos Ayres, from which it is learned that the population of the city (not including Flores and Belgrano, which have recently been annexed to it) is 424,873. The mortality for the year 1887 reached a total of 12,894 deaths, including cholera, 606; small-pox, 1,290; diphtheria, 975; measles, 126; typhoid fever, 279; and scarlet fever, 606. The deaths from infectious diseases amounted to 26 per cent. of the entire mortality. The consul states that "the people of this country have seemed to have a superstitious opposition to vaccination as an interference with Divine Providence, very few of them ever taking the precaution to be vaccinated, while the municipality have taken very few safeguards against its spread. It has now passed an ordinance making vaccination compulsory, and if it is properly enforced it is probable that the death-rate from that horrible disease will hereafter be reduced. . . . With an area of upward of 12,000 acres and over 50,000 houses, the city is absolutely without either drainage or sewerage, and this in the face of the fact that it has more than doubled its population during the last fifteen years. In the year 1874 a grand scheme of complete drainage for both streets and houses was inaugurated, and nearly fifteen millions of dollars have already been expended in its construction. The street sewers are now almost ready for use, and would be of some utility were it not that the principal outlet or siphon which is to receive the accumulations of the drains and carry them into the river Plate, about 12 miles below the city, has not yet been commenced. Besides this, not a single house has yet been connected with the street drains. . . . Under these circumstances, the wonder is not that the health of Buenos Ayres is not satisfactory, but that the death-rate is not greater than it is. In spite of the want of drainage, however, the city has all these years kept remarkably free from epidemics. Not since 1869, when over 20,000 inhabitants fell victims to the disease, has there been a single case of yellow fever here. In 1873–'74 and last year Asiatic cholera, imported on immigrant steamers, was somewhat prevalent in the city, as well as in other portions of the country, but on neither occasion was there any very decided development or alarming mortality. Perhaps the reason that Buenos Ayres has thus far been so fortunate in escaping yellow fever, which every summer is so fatal in Rio Janeiro, is the rigid and carefully guarded quarantine which, on the least suspicion, is maintained against vessels arriving from Brazil. Last year it was not successful in preventing the introduction of cholera from Italy, but, with the precautions which it is intended henceforth to adopt against arrivals from infected ports, it is not probable that Buenos Ayres will have a recurrence of that dread disease. Meanwhile the National Congress, at its last session, made provision for selling the unfinished city sewerage works to the highest and best bidder, with proper guarantees for their completion, the purchaser to have all the privileges of collecting sewerage rates that the municipality possessed. I understand that European capitalists are ready at once to assume the works and finish them before another year shall have elapsed. If this be so, we may expect that Buenos Ayres will once more maintain the position, which for two centuries and a half it occupied, of being the healthiest city with the best climate of any port in the world."

Callao.—The United States consul, in his dispatch dated March 27, 1888, inclosed a copy and translation of the convention signed at Lima, on the 12th of March, by the delegates to the American Sanitary Congress convened under the auspices of Peru. The consul states: "I am informed by the Foreign Office that this convention must yet be approved by the Congresses of the contracting Republics, but it is understood that this approbation will be granted, since on the respective delegates were conferred full powers. The stipulation that no further closing of ports shall be resorted to is one of very great importance as regards commercial interests and personal convenience."

The convention contains seventeen articles, and, among other things, the contracting countries agree in declaring exotic pestilential diseases: yellow fever, Asiatic cholera, plague. An infected port, that in which any of said diseases may epidemically exist. A suspected port, that in which appears one or another isolated case of either of the three pestilential diseases; that which may have easy and frequent communication with infected localities; that which does not sufficiently protect itself against infected localities. An infected ship or vessel, that on board of which may have occurred a case of pestilential disease. A suspected ship or vessel, that proceeding from an infected or suspected port, may not have had on board during the voyage any case of pestilential disease; that which, although proceeding from a healthy port, may have touched at one infected or suspected; that which, during the voyage or in distress, may have communicated with a vessel of unknown infected or suspected procedure; that which may have had on board deaths from no determinate cause, or repeated cases of any disease whatever.

"For the proper carrying out of the sanitary service, an international regulation shall be issued uniforming general measures and those especially applicable to other countries. The contracting countries oblige themselves to establish the lazarettos that may be necessary, and permanent lazarettos are to be located on islands; to establish floating hospitals adjacent to the permanent lazarettos, for the treatment of persons attacked by exotic pestilential diseases on the vessels which may arrive or those already at anchor."

Havana.—Four deaths from yellow fever and 10 from small-pox were registered for the week ending April 21, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	April 14.	2,260,945	1,082	..	....	7	....	10	4	39
Warsaw	April 7.	439,174	240	..	....	4	....	....	3	7
Calcutta	March 10.	433,219	240	35	....	1	....	....	....	....
Calcutta	March 17.	433,219	251	74	....	....	....	....	....	....
Amsterdam	April 14.	389,916	179	..	....	....	....	2	....	2
Copenhagen	April 3.	300,000	155	..	....	....	....	....	3	5
Edinburgh	April 14.	262,733	104	..	....	....	....	....	2	2
Palermo	April 14.	250,000	99	..	....	....	....	1	3	5
Genoa	April 14.	179,421	97	..	....	....	....	....	....	2
Trinidad	March 31.	178,270	43	..	....	....	....	....	....	....
Toronto	April 21.	130,000	53	..	....	....	....	....	1	3
Trieste	April 7.	154,500	100	..	....	....	....	2	....	2
Stuttgart	April 14.	125,510	50	..	....	....	....	....	....	....
Bremen	April 7.	122,000	43	..	....	....	....	....	1	....
Pernambuco	April 3.	110,000	97	..	....	....	....	2	....	....
Barmen	April 14.	109,000	50	..	....	....	....	....	....	2
Leghorn	April 15.	101,718	39	..	....	....	....	....	....	....
Cadiz	April 7.	65,028	38	..	....	....	....	....	....	....
Merida	April 17.	48,832	29	..	....	....	....	....	....	....
Cienfuegos	April 16.	40,573	12	..	....	4	1	1	1	1
Port au Prince	April 11.	40,000	20	..	....	....	....	....	....	....
Callao	March 31.	34,000	......	..	....	....	....	....	....	....
Gibraltar	April 15.	23,631	7	..	....	....	....	....	....	....
St. Thomas	April 6.	15,000	10	..	....	....	....	....	....	....
Paiti, Peru	March 31.	4,000	......	..	....	....	....	....	....	....

UNITED STATES.

Philadelphia, Pa.—Small-pox.—Eighty-two cases and 5 deaths were reported up to April 26, 1888.

Florida.—Dr. A. W. Knight, in his report referred to in the last Abstract, states that "on the 17th and 18th of April I was at Plant City, Fla. Two cases of yellow fever still remaining. One of these convalescent and out of danger. One case critical on 18th. No other cases there or at Lakeland, Seffner, Ybor City, or Tampa. Tampa and Ybor City unusually healthy. No cases at that date, either at Bartow or Micanopy. No excitement in any of the towns nearest Plant City. I visited these points per order of the Board of Health of Duval County."

Key West, Fla.—Small-pox.—One new case reported during the week ending April 21, 1888.

Delaware Breakwater U. S. Quarantine.—Quarantine was opened at this station on the 1st instant.

ANSWERS TO CORRESPONDENTS.

No. 181.—For the purpose mentioned, we think a card catalogue should be made, and the pamphlets kept in numbered boxes, each box being provided with an index of its contents.

No. 182.—Treat them with the sulphurous acid of the pharmacopœia. For a method of rendering them aseptic, see the Journal for October 8, 1887, page 421.

No. 183.—One that is neither acid nor basic.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

OUR PRESENT KNOWLEDGE REGARDING MUSCULAR ATROPHIES AND HYPERTROPHIES.

By LANDON CARTER GRAY, M. D.,
PROFESSOR OF NERVOUS AND MENTAL DISEASE IN THE NEW YORK POLYCLINIC.

The muscles, the motor nerves, and the anterior column of gray matter, whence the motor nerves originate, constitute, anatomically and pathologically, a system apart, which may be termed the neuro-muscular apparatus. Disease of any one of the three component parts of this neuro-muscular apparatus—muscles, motor nerves, anterior column of gray matter—is so apt to extend into the two others, or be associated with them, that the close anatomical connection between the three is evidently the main material reason for as intimate a pathological relationship. It is, therefore, necessary to have a clear conception of the anatomy of these structures.

The anterior column of gray matter extends throughout the spinal cord and the upper enlarged intracranial end of the spinal cord, which is known as the oblong cord or medulla (medulla oblongata), and into the third ventricle. It is placed in different positions in these portions of the nervous system. In the spinal cord it is in the center, in the shape of so-called "horns," or "cornua." In the intracranial portion of the spinal cord—the medulla oblongata, the floor of the third ventricle, and the aqueduct of Sylvius—it is diffused into separate masses, so-called "nuclei." This anterior column of gray matter extends, therefore, from the cauda equina up into the anterior and lowermost portion of the third ventricle. It is always, without a known fact to the contrary, motor in its function, and gives origin only to the motor nerves. At the present day our knowledge is very exact concerning the levels in which the different motor nerves thus have their origin, commencing above with the third pair, or motor oculi, and passing down to the nerves of the lower extremities. Fig. 1 will show the intracranial portion of this gray matter, and should be carefully studied. It represents a longitudinal section through the center of the intracranial mass, showing the ventricular cavities and their relations. The nerve cells within this anterior column of gray matter are known as the ganglion cells. They are of considerable size and endowed with a distinct nucleus and nucleolus and with a number of protoplasmic prolongations running off from the body of the cell, known as processes. These processes are of two kinds. One branches and rebranches as it passes away from the cellular body, growing smaller as it goes, and is called the "protoplasmic process." The other does not branch as it passes away from the cell, but grows slightly larger, and has been seen by a great number of competent observers to take on a covering of myelin and pass to the periphery; hence, it is extremely probable that it represents the axis-cylinder of a peripheral nerve, and it is called the "axis-cylinder process." The termination in the muscles of the nerve-fibers thus originating has been carefully investigated by many of the best-known histologists of the day; most recently by Gessler in the green Italian lizard and the guinea-pig. Gessler states that the motor end-plate is essentially the same in the *Mammalia* and reptiles. This motor end-plate consists of a fine nerve-plexus, between or under which—for authors differ on this very immaterial point—lies a finely granulated mass, containing two varieties of nuclei—the one kind, the smaller, being granulated and of irregular shape; the other kind being larger, oval in shape, with double contours and a nucleolus. The former are known as the *Scheiden-* or *Geästkerne*, or, as Ranvier calls them, the *noyaux vaginaux* or *de l'arboration*, while the latter are the *Grund-* or *Sohlenkerne*, or *noyaux fondamentaux* of Ranvier. To this motor end-plate, lying upon the muscle, come the medullated nerve-fibers at a right angle, losing their medullary sheath as they pass into the nerve-plexus just described.

There are reasons for supposing that these ganglion cells in the anterior column of gray matter are of two kinds in regard to their function; for these anterior columns are subject, on the one hand, to disease in which motor paralysis is the first and predominant symptom and, on the other hand, to other disease in which wasting of muscular fiber is the first and predominant symptom. It would, therefore, seem as if in the first case there were a motor cell, whose disease gave rise to paralysis, while in the latter case it seems impossible to deny that it is disease of a nutritive or trophic cell which has produced the primary wasting of muscular fiber. To be sure, in every case of disease of the cells of the anterior gray column there is sooner

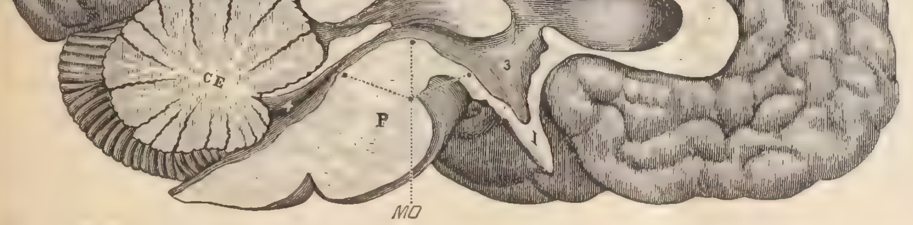

Fig. 1.—CC, the corpus callosum; P, the pons Varolii; 1, the infundibulum, or funnel-shaped prolongation of the third ventricle; 3, the third ventricle; 4, the fourth ventricle, the floor of which is formed by the upper surface of the medulla oblongata; CE, the cerebellum. From the fourth to the third ventricle is seen a channel, which is the aqueduct of Sylvius. The three diverging lines MO point to the surface whence arise the fibers of the motor oculi, the anterior line indicating the origin of the fibers to the iris, and the tensor of the chorioid; and in the floor of the third ventricle, the aqueduct of Sylvius, the fourth ventricle, and below, are the nuclei of the other cranial nerves.

or later certain to be both motor paralysis and muscular atrophy, without regard to which came first; and the two kinds of cells are thus always affected, although not simultaneously.

Disease in any one of the three component parts of this neuro-muscular apparatus — ganglion cells, motor nerves, muscles—will produce a motor paralysis and atrophy. This should be very easily understood. If the ganglion cells are diseased, the motor nerve will degenerate and the muscle will be paralyzed and will atrophy. If the motor nerve is diseased, the portion of nerve below the site of disease will also degenerate and the muscle will be paralyzed and will atrophy as before. If the muscle itself is diseased, it may be paralyzed, of course, and may atrophy. The three symptoms, therefore, of disease of the neuro-muscular apparatus are: 1, motor paralysis; 2, atrophy of muscles; 3, electrical changes brought about by degeneration of nerve and muscle.

We can now readily understand why there has been such dispute, when these three symptoms were present, as to which one was diseased of the three component parts of the neuro-muscular apparatus—ganglion cells, motor nerves, or muscles. The real objective point is the muscle. It is very dependent on the nervous system, and the nervous system is very dependent on it. Neither can do without the other. The muscle can not contract intelligently except by means of the nervous system. The nervous system can not express itself except by means of certain muscles, and can not exist except by means of certain others. The brain, sending down its mandates to the cells in the anterior column of gray matter, and thence through the motor nerves, can only communicate its various thoughts and emotions to the outside world through the muscles, and can only act through them; and the nervous centers that, in their mysterious way, supply nervous force to the muscles of the heart, respiratory structures, and arteries, can not maintain life without muscular action, as of the vascular apparatus. On the other hand, of what use would a leg or a heart be unless each was in intimate connection with the nervous system? So, after all, it is the muscle that is to be studied in disease of this neuro-muscular apparatus. Muscular—*i. e.*, *motor*—paralysis and muscular atrophy, then, with or without electrical changes, are the signs of disease in the neuro-muscular apparatus, *i. e.*, of disease either in the anterior gray column, in the motor nerves, or in the muscles.

A priori it is difficult to understand why disease attacking one portion of this anterior gray column, say that of the lumbar enlargement, should not travel up throughout the whole column, implicating all the centers of origin of the muscles of the trunk, neck, heart, respiratory structures, face, and head; or why disease should not always extend inward through the muscles as well as outward to them. Laws of disease, however, as yet unknown to us are at play here, as in other structures of the body; and we can only study the workings of these laws without attempting an explanation of them. We can certainly say that, during the first three years of life, the anterior column of gray matter in the dorsal cord is specially prone to one-sided disease. We can certainly say that that portion of the anterior gray column containing the nuclei of the facial, hypoglossal, and spinal accessory nerves is specially prone to disease that does not extend upward or downward. We can certainly say the same thing of the nuclei of the different nerves of the eyeball, the third, fourth, and sixth. We can certainly say that in certain individuals the muscles alone are diseased. But certain as we are in saying all these things, we can not attempt to explain why it should be so. It must, moreover, be remembered that these different results were seen before the pathology was known; so that the nomenclature, being representative of the purely clinical or locally pathological standpoint, is by no means consistent.

The diseases of the neuro-muscular apparatus are known as—

1. Myelitis of the anterior horns, or cornua.
2. Glosso-labio-laryngeal paralysis, or bulbar[*] paralysis.
3. Progressive ophthalmoplegia.
4. Muscular pseudo-hypertrophy.
5. Progressive muscular atrophy.

Of these, the first three—myelitis of the anterior horn, bulbar paralysis, and ophthalmoplegia—are due to lesions in the anterior gray column; the fourth, pseudo-hypertrophy, is indubitably of muscular origin; while the fifth, progressive muscular atrophy, is sometimes due to lesions in the anterior gray matter, sometimes to muscular lesion, sometimes to both neural and muscular lesions. Each of the three due to central lesion has an individual localization in the anterior gray matter. The first, myelitis of the anterior horn, arises from implication of the anterior gray matter of the spinal cord; the second, glosso-labio-laryngeal paralysis, arises from implication of the nuclei in the medulla oblongata of the hypoglossal, facial, and spinal accessory nerves; while the third, progressive ophthalmoplegia, is due to affection of the nuclei of the ocular nerves in the floor of the aqueduct of Sylvius and the third ventricle.

Myelitis[†] of the anterior horns, or cornua, is a motor paralysis affecting muscles of the extremities that are associated in function, and followed by atrophy and electrical alterations in the paralyzed muscles. Although it may occur at any time of life, cases having been observed at the extremes of three months and sixty-seven years, there are yet two periods of life which seem especially predisposed to it—viz., the three first years of infancy and the period between the eighteenth and fortieth years. It may be acute, subacute, or chronic. In all cases the paralysis is the first symptom, and is followed by atrophy in the course of a few weeks in the acute cases, or a longer time in the chronic ones. It is usually confined to one extremity in children, generally to a lower limb, while in adults paraplegia is the most usual form of paralysis.

Glosso-labio-laryngeal paralysis[‡] is a motor paralysis with muscular atrophy, affecting the motor cranial nerves and their muscles, especially the hypoglossal, certain filaments of the facial, and certain filaments of the spinal accessory. Usually the atrophy is the first symptom that is noticed, although some authorities contend that the paralysis may be primary. The atrophy first shows itself in the muscles of the tongue, then in the muscles of the lips and the lower face (seldom in the eyelids), and, finally, in the muscles of the larynx, pharynx, œsophagus, and heart. The lingual difficulty is evidenced, as has been said, by the atrophy of the tongue, giving the tongue a fissured and crenulated appearance, as if its substance had been chipped out in places and trimmed on the edges, as is seen in Fig. 2, in which the thinning of the organ causes it to curl over and have a fallacious increase in size. Furthermore, the increasing paralysis causes difficulty in the pronunciation of the letters which are mainly pronounced by the tongue, and some difficulty in deglutition. The affection of the lower face and lips is denoted by a wasting of their muscles, by difficulty in the pronunciation of the lip-sounds, and by alteration in the expression of the face.

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[*] An adjective bestowed upon the medulla oblongata because of its bulbous shape.

[†] Synonyms are anterior polio-myelitis, essential paralysis of children, infantile spinal paralysis, atrophic paralysis of children.

[‡] The synonym is bulbar paralysis.

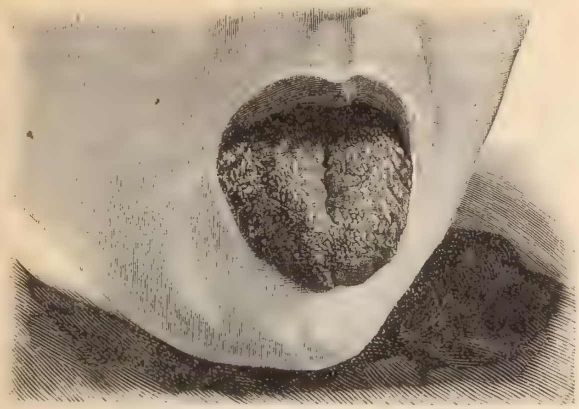

Fig. 2.

Progressive ophthalmoplegia is manifested by a paralysis of the muscles of the eye, which are of two varieties—the exterior and the interior. The interior muscles are the sphincter of the pupil and the tensor of the chorioid, while the exterior muscles are the six well-known ones attached to the globe. The third pair, the motor oculi, supplies these interior muscles and four of the six external ones, as well as the levator palpebræ superioris. The four thus supplied are the internal rectus, turning the eye inward; the superior rectus and the inferior oblique, the two elevators of the eye; and the inferior rectus, one of the two depressors of the eye. Of the two others of these six exterior muscles, one, the superior oblique, is supplied by the fourth or trochlear nerve, while the other, the external rectus, is supplied by the sixth nerve, the abducens. It is the nuclei of these different ocular nerves which are affected in the so-called ophthalmoplegia, and the symptoms are thus the symptoms of paralysis of these exterior and interior muscles, together with the levator palpebræ superioris. As might be expected by reasoning beforehand, the paralysis may sometimes affect the exterior muscles, sometimes the interior muscles, and sometimes partially both.

Muscular pseudo-hypertrophy is a disease of early childhood, characterized by a deposit of fat around the muscular fiber, more especially in the muscles of the lower extremities, which come to have a hypertrophied appearance. The upper extremities are usually affected simultaneously with an atrophy, and the contrast between the seemingly sturdy legs and the wasted arms and shoulders is not likely to be forgotten when once seen. Attention is at first directed to the disease by the stumblings and falls and increasing weakness, which seem the more inexplicable because of the simulated robustness of the members.

Progressive muscular atrophy is a disease about which there has been much dispute and great confusion. The early writers were strongly of the opinion that it was always due to disease of the anterior gray column; Friedreich wrote a great tome upon the subject in 1873 to prove that it was always of muscular origin; and in the last few years facts have accumulated to prove that it has sometimes a muscular and sometimes a central origin. The great strife waged in regard to the pathology led to an attempt to throw light upon this subject by the study of so-called "types," or, in other words, to say that, when certain groups of muscles were affected, the disease must be of central origin, and that, when certain other muscular groups were affected, the disease must be of peripheral origin. This type-making business has been carried to such ridiculous extremes that there

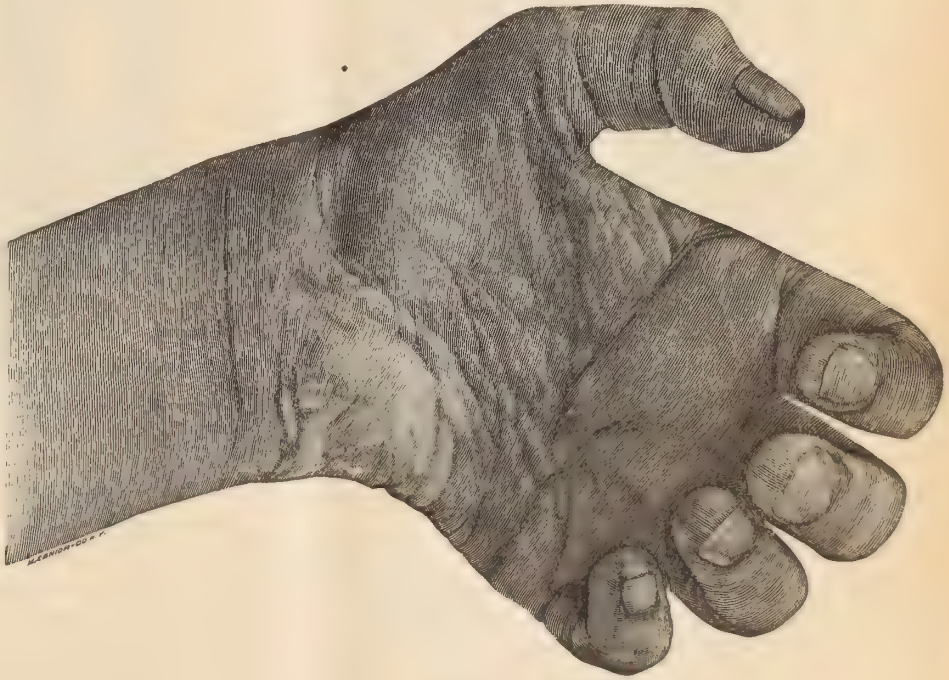

Fig. 3.

are fully a dozen different groups which the pretended discoverers would have us know by their own names; nevertheless, we are warranted, both from a clinical and from a pathological standpoint, in accepting four types:

1. The hand type.
2. The juvenile type (Erb).
3. The infantile facial type (Landouzy and Déjérine).
4. The peroneal type (Charcot, Marie, Tooth).

1. *The Hand Type.*—In this the onset is generally in the right hand, occasionally in both hands. The short muscles of the thumb and the ball of the little finger are generally first affected—the so-called *thenar* and *hypothenar* eminences. It is usual for the atrophy to begin in the abductor pollicis brevis, and then be observable in the opponens and adductor. The complete atrophy of these thumb muscles produces a condition to which the name has been given of "ape-hand" (*Affenhand*). Fig. 3 shows this beautifully, besides the droop of the wrist due to ulnar paralysis. At about the same time, sometimes a little sooner, sometimes a little later, the interossei are implicated, as is to be seen by a sinking of the spaces on the back of the hand; when this atrophy has attained to a certain grade, it produces, together with a contraction of the antagonist muscles, the so-called "claw-hand." (*main-en-griffe, Klauenhand*).

Consecutively to the hand muscles, often after a long time, sometimes even after years, the forearm or upper-arm muscles are usually attacked. In the forearm it is apt to be the abductor and extensor pollicis longus, the supinators, and the flexors. In the upper arm the deltoid is almost invariably the first to waste, then the biceps, and, finally, the triceps last of all. But, sooner or later, the muscles of the trunk may be implicated, especially the trapezius, the pectorals, the rhomboids, and the latissimus dorsi. Atrophy is infrequent of the cervical or respiratory muscles, or of the diaphragm. After many years of duration the nuclei in the medulla oblongata may be affected, and then may ensue atrophy of the tongue and difficulty of deglutition, and death may result from inanition or respiratory disturbance.

2. *The Juvenile Type* (Erb).—This form was first described by Erb, in 1884, and differs essentially from the hand type in the location of its onset, which is almost always in the muscles of the shoulder and upper arm, far less often in the muscles of the pelvis and lower extremities, while, as has just been explained, the hand type primarily affects the hand muscles; and only secondarily, often after a long time, are the shoulder and arm muscles involved. The shoulder and arm muscles often atrophied are the pectorals, trapezius, rhomboids, serrati, latissimus dorsi, longissimus, sacro-lumbalis, forearm flexors, supinator longus, and triceps; and, in the lower extremities, the glutæi, quadriceps, peronei, and tibialis anticus.

3. *The Infantile Facial Type* (Landouzy and Déjérine).—It generally begins with an atrophy of the muscles of expression, which is thus described by Landouzy and Déjérine: "The face is in repose, the lips protruding, the brow like ivory, a seeming protrusion of the eyes; in efforts at mimicry the smile is sad (*rire en travers*), the movements of the lips are incomplete, and the immobility of the lips is in marked contrast to the animation of the eyes." When the face is wasted, it is the rule that the muscles of the shoulder and arms are involved next; but certain muscles usually remain intact—such as the supra-spinalis, the infra-spinalis, the infra-scapularis, and the flexors of the hand and fingers.

4. *The Peroneal Type* (Charcot, Marie, Tooth).—The French writers described this form in 1886, while Dr. Tooth states that he also called attention to it at the same time in his graduation thesis. As is indicated by the name I have given it, it first shows itself in the muscles of the leg, invading the hand, and then the forearm several years afterward.

The following table shows, side by side, the location of the atrophy in each of these four types:

Hand type.	Juvenile type.	Inf. facial type.	Peroneal type.
Muscles of the thumb and fingers: Abductor pollicis brevis, Opponens, Adductor, Interossei, Lumbricales. Ape-hand. Claw-hand. Arm muscles: Abductor and extensor longus pollicis, Supinators, Flexors, Deltoid, Biceps, Triceps.	Muscles of the shoulder and upper arm: Pectorals, Trapezius, Rhomboids, Serrati, Latissimus, Longissimus, Sacro-lumbalis, Flexors of the forearm, Supinator longus, Triceps. Muscles of the lower extremity: Glutæi, Quadriceps, Peronei, Tibialis anticus.	Facial muscles of expression. In the shoulder and arm muscles these are intact: Supraspinalis, Infraspinalis, Flexors of the hand and fingers.	Muscles of the leg, then the hand and forearm.

The course of progressive muscular atrophy is gradual, and the duration is from five to thirty years. The chronic and fibrillary atrophy may not be detected for some time, until enough of the muscle has been affected to alter the contour and consistence, which latter is then found upon palpation to be softer and less resilient than in the healthy muscle. The paralysis is usually proportionate to the atrophy. It not infrequently happens that the loss of muscular strength first attracts the attention of the patient, and an examination then brings the atrophy to view. So-called "fibrillary contractions" are frequently present in all the types, and consist of minute movements of the muscular fibers, varying in extent from an occasional whipcord-like movement under the skin, likened by the patient to a pulse-beat, to a wide set of fibrillary movements that may set a whole group of muscles in tremulous movement. In many cases of progressive muscular atrophy the muscular atrophy is curiously conjoined with real or pseudo-hypertrophy—*i. e.*, an actual increase in the size of the muscular fiber, or a substitution of fat in the place of the muscular fiber or around it. This is well seen in Figs. 4 and 5, which are of a patient who has been in my hospital wards for some eight years, and whose case began with atrophy in the thumb muscles, as is shown in Fig. 3. Robust as this man seems, he can not raise himself from a sitting posture without great aid, and, when erect, can be literally pushed over by a light touch with the finger. Especially noteworthy are the contrast between the size of his shoulders and his upper arms and between his forearm and his upper arm; the great ridge in his dorsal and lumbar spine from curvature of the vertebral column anteriorly to compensate for the atrophy and paralysis of the anterior abdominal muscles; the pseudo-hypertrophic outgrowth on the left calf; and the many alternating atrophies and hypertrophies.

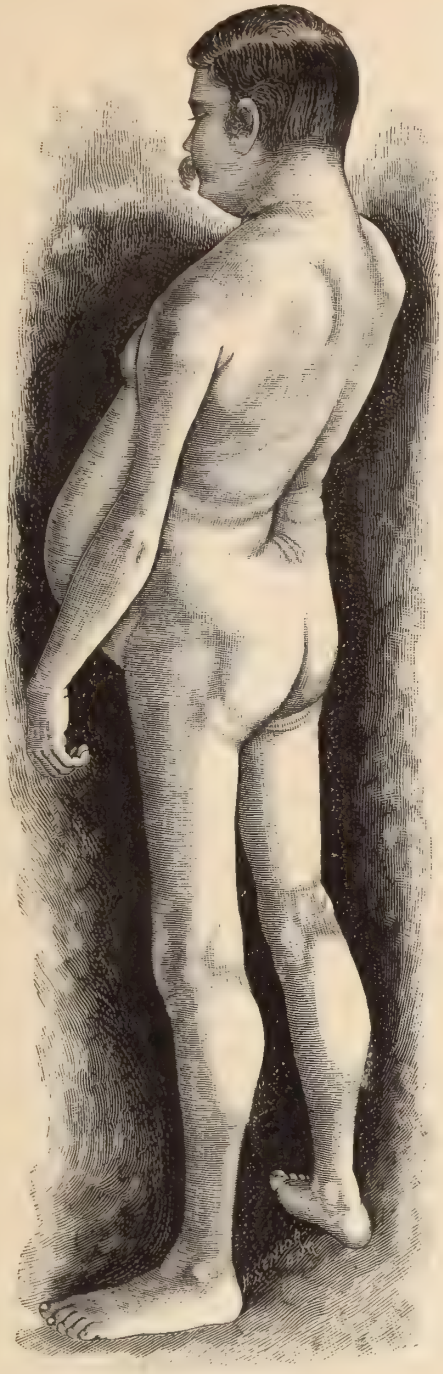

FIG. 4.

The electrical changes in these different diseases of the neuro-muscular apparatus are often very considerable. In order to understand them it is necessary to have some comprehension of the mode of reaction of a healthy nerve and muscle to the galvanic and faradaic current. For diagnostic purposes two currents, the galvanic and the faradaic, are used. When the faradaic current is applied to a nerve leading to a muscle, or to the muscle itself, a contraction of the muscle results, dependent upon the strength of the current used, very little difference being observed between the effect of the positive and that of the negative pole.

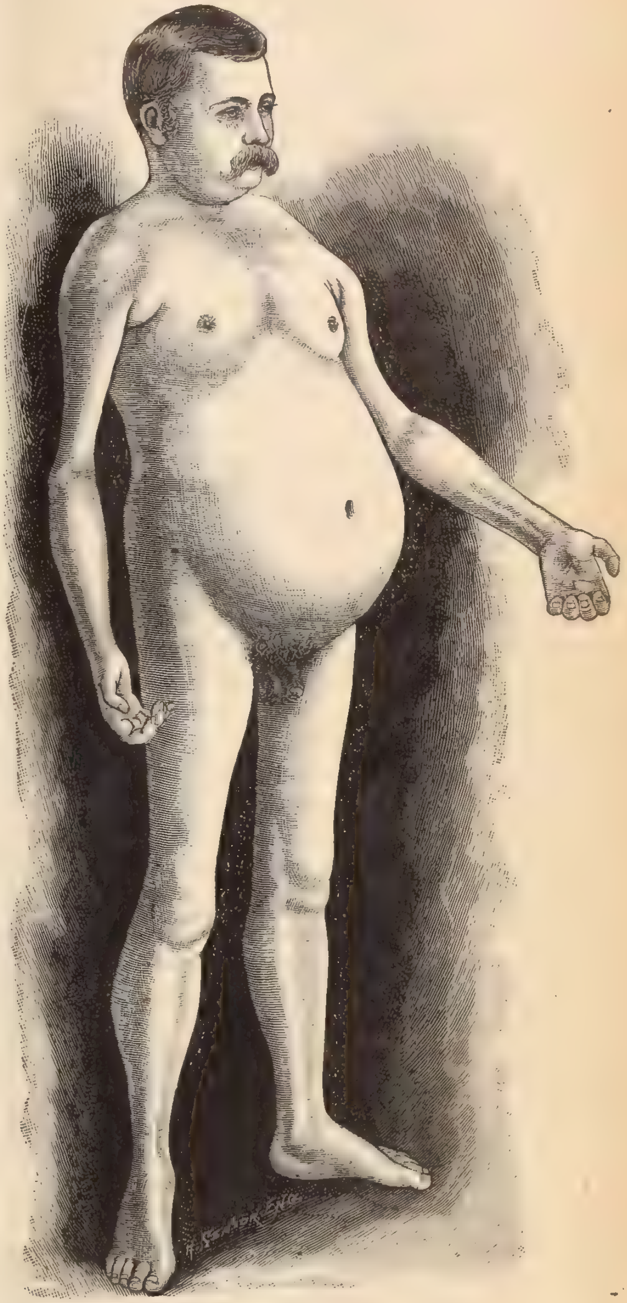

FIG. 5.

When, however, a galvanic current is applied to a motor nerve leading to a muscle, or to the muscle itself, the resulting contraction of the muscle will be very different accordingly as the positive or negative pole is employed. If we search for the weakest galvanic current that will cause a muscular contraction, we shall obtain it first with the negative pole, before we can obtain any contraction whatsoever with the positive. Nor is this all. This contraction thus obtained with the negative pole is only seen when we close the circuit, and is not at all present when we open the circuit. Let the galvanic current now be made stronger, and we shall obtain an intensification of the contraction thus produced with the negative pole at the closing; and after a while we shall obtain a contraction with the positive pole, sometimes first at the closing of the circuit, sometimes at the opening of the circuit. Then, making the galvanic current still stronger, we shall obtain an intensification of what we have already obtained—viz., a contraction with the negative pole at the closing, and with the positive both at the closing and the opening. It will be noticed that so far we have obtained no contraction at all with the negative pole at the opening of the circuit. It is very important to remember that this will not be obtained in a healthy nerve or muscle until the current becomes so strong as to be painful.

From this it will be observed that the healthy muscle reacts first to the negative pole at the closing, and then to the positive pole either at the closing or the opening, and finally that the negative pole at the opening does not produce a contraction unless the current is so strong as to be painful. Suppose, then, that the negative pole at the opening gives us a muscular contraction in a certain case with the same strength of current that is sufficient for a contraction with the negative pole at the closing, is it not evident that the reaction of the healthy nerve and muscle is entirely altered? Or suppose that exactly the same strength of current gives us equally strong contractions with the negative closing and the positive opening and closing, is it not again evident that there is some alteration? In other words, any marked departure from this healthy formula of nerve and muscle is evidence of disease. At the same time that we get these changes with the galvanic current we should also have others with the faradaic, consisting simply of decreasing reaction to the current, so that larger and larger quantities would be required to produce a muscular contraction. But there are other electrical symptoms in these cases, which any one can understand who will take the trouble to study them in any case of neuritis in the human being, or in an artificial neuritis in the frog, rabbit, or guinea-pig that can be produced by section of the sciatic nerve. It will then be found that during the first ten days or two weeks there will be, in the motor nerve and in the attached muscle, decreasing reaction to both the galvanic and the faradaic currents. About the third week the nerve and muscle will begin to behave differently to each of the two currents. To the faradaic the nerve and muscle will display a constantly decreasing reaction, so that larger and larger quantities of electricity will be required, until it may happen that no contraction whatsoever can be produced. But, singular to say, at this period—*i. e.*, about the third week—the nerve begins to show an increasing reaction to galvanism, so that lesser and lesser quantities are required to produce a muscular contraction. At the same time a reversal in the healthy polar formula, such as has been above described, is apt to ensue, so that the negative opening may equal the positive closure, or the positive opening and closure may equal a negative closure. In the course of time this increased reaction to galvanism and the reversal of the polar formula may pass away, and the nerve and muscle may again decrease in its reaction to this current. During this whole period of altered electrical reactions the muscular contraction is more sluggish than in the healthy muscle. All these alterations in the reaction of the healthy nerve and muscle, either together or separately, are known as the reaction of degeneration. They consist, as will have been seen, of—

1. Decreased reaction to faradaism and galvanism.
2. Increased reaction to galvanism.
3. Reversal of the healthy polar formula.
4. Sluggish muscular contraction.

These should be studied with the same care and patience that are given to auscultation and percussion.

The pathology of these different diseases of the neuromuscular apparatus is very well understood at the present day. In three of the five diseases which have been enumerated—myelitis of the anterior horn, glosso-labio-laryngeal paralysis, and progressive ophthalmoplegia—the lesion consists of death or injury of the ganglion cells in the anterior gray horns of the spinal cord or in the motor nuclei of the medulla oblongata, the aqueduct of Sylvius, and the third ventricle. The changes in these ganglion cells vary somewhat according to the extent and kind of the disease. In some cases there is not a vestige left of the cells. In others they are more or less disintegrated, some processes being lost, others being altered in shape and size, while the nuclei or nucleoli may be destroyed, although these latter almost invariably persist when any vestige of the cell is left. In myelitis of the anterior horns and in glosso-labio-laryngeal paralysis the affection is generally confined to the cells, or other changes are evidently consecutive to these, such as increase in the size of the vessels, increased growth of the connective tissue, and shrinking of the cord or medulla oblongata on the affected side. But in progressive ophthalmoplegia the affection of the ganglion cells seems to be only part of a somewhat diffused myelitic process. When the ganglion cells are affected, the motor nerves and the attached muscles will be found to have undergone serious alterations. The nerves are apt to be thinner, grayish looking, and more transparent, their axis-cylinder and medullary sheaths will be found more or less disintegrated, and the connective-tissue sheath thickened and its nuclei increased in size and number. The muscles usually undergo an atrophy, which may be of two kinds: the so-called simple atrophy, in which the muscular fiber is simply decreased in size but its transverse striæ are preserved, while in the degenerative atrophy the transverse striæ are lost. But there may also be hypertrophy or pseudo-hypertrophy of muscle, the first consisting of actual hypertrophy of the muscle fiber, the latter being a conversion of the muscle fiber into fat, as well as a surrounding deposit of fat. In the fourth of the five diseases which have been enumerated, muscular pseudo-hypertrophy, the disease is purely of muscular origin, cases having been collected by Middleton and Schultze in demonstration of this fact. In progressive muscular atrophy there can be no doubt but that some cases are of central origin, others of muscular origin, while it would seem, from the history of some few cases, as if a third class were both of central and of peripheral origin. I have been able to collect thirteen cases in which the disease was central, as was proved post mortem, while there have been but two autopsies of cases of purely muscular origin.

The diagnosis of these various affections of the neuro-muscular apparatus is made, in the vast majority of cases, with ease and certainty. In every instance the symptoms are purely motor; sensory, cerebral, vesical, and rectal symptoms being either temporary in duration or entirely absent. Of course, if the anterior gray column should be implicated in diffused disease extending into it from other parts of the nervous system, the diagnosis may become a very complicated one; but this may be met by bearing in mind the usual complications. These purely motor symptoms consist, as has been said, of motor paralysis, muscular atrophy or hypertrophy, and altered electrical reactions.

Whenever these three symptoms are present, disease of the neuro-muscular apparatus may be positively diagnosticated. It then becomes a question as to whether the lesion is in the anterior gray column, in the motor nerve, or in the muscles.

The symptoms upon which lesion of the anterior gray column may be affirmed are a sudden onset of paralysis, followed in the course of a few weeks by atrophy and reaction of degeneration; or the group of symptoms described under the head of glosso-labio-laryngeal paralysis; or the gradual paralysis of the different interior and exterior muscles of the eyeball, described under the heading of progressive ophthalmoplegia.

The symptoms upon which a diagnosis may be positively made of disease of the muscles alone are the group of phenomena which have been described under the heading of muscular pseudo-hypertrophy, and the infantile facial type of progressive muscular atrophy described by Landouzy and Déjérine.

Undoubtedly there are many other symptoms that have been vaunted by different authors as of importance in the differential diagnosis, but these are, in my opinion, the only ones upon which we can place absolute reliance. For instance, it has been contended that the form of progressive muscular atrophy which I have described above as the "hand type" always points to a spinal origin, yet cases of purely muscular disease have begun in the hands. And Erb would maintain a purely muscular origin for his cases of the so-called juvenile type, but, as Schultze very clearly points out, Erb's cases are of several kinds, some being evidently pseudo-hypertrophies, others belonging to the Landouzy and Déjérine type, etc., while not a single autopsy has been made in this juvenile form of Erb.

The altered electrical reactions of the so-called reaction of degeneration are only indicative of muscular change. This is indicated very clearly, it seems to me, by the fact that this reaction of degeneration has been found in cases of both peripheral and central origin, as well as by the researches of Gessler upon guinea-pigs and lizards that demonstrated the dependence of this reaction of degeneration upon muscular atrophy alone. Fibrillary contractions, supposed to be of so much diagnostic importance in the days of old, are found in cases of both central and peripheral origin, and are, therefore, of no importance in the differential diagnosis.

Causation.—The most frequent causes of the diseases of the neuro-muscular apparatus are infection, heredity, muscular strain, trauma, acute diseases, exposure to continuous cold, and warm weather. The later German authors are displaying a tendency to ascribe the acute form of myelitis of the anterior horn to infection, because of the simultaneous manifestation of the disease in two or three children of one family or one locality. There is no definite proof of this, however, and it is possible that it may be explained by the fact to which Dr. Weir Mitchell called attention several years ago—viz., the greater frequency of myelitis of the anterior horn during the warmer months of the year. Heredity is usually found in the infantile facial type of Landouzy and Déjérine, and plays a large part in all the types. Some authors would maintain that heredity is a diagnostic mark of the purely muscular forms, but the scientific evidence at our command does not warrant this assertion. Friedreich points out the relation of muscular strain to the resulting atrophy in case after case, and it is a very familiar clinical fact to me.

Progressive muscular atrophy has often been known to follow typhus, diphtheria, measles, acute rheumatism, parturition, and cholera; so that these acute diseases must have some unfavorable influence upon the neuro-muscular apparatus.

Diagnosis.—In making a diagnosis it must not be forgotten that other diseases of the spinal cord and its surrounding membranes or osseous structures may extend into the anterior horns, in which case the symptoms of motor paralysis and muscular atrophy may be superadded to the original symptoms of the invading disease. Such complicating diseases may be spinal hæmorrhage, transverse myelitis, syringo-myelitis, or locomotor ataxia. All of these, besides the characteristic features of each of them, will have marked sensory, vesical, and rectal symptoms. Should a spinal hæmorrhage take place to such a limited extent as only to involve one anterior horn, it might be impossible to make the differential diagnosis; but I know of no such case on record. In the early stages of syringo-myelitis—*i. e.*, formation of a gliomatous tumor and cavity within the substance of the cord—the affection might be limited to one anterior horn, and thus cause confusion, but the later history of the case will make matters plain.

A differential diagnosis must also be made from the acute exanthemata; meningitis, traumatic, from ear disease, or cerebro-spinal; meningo-encephalitis of children; neuritis, simple or multiple; lead palsy; joint atrophies; and hysteria.

It is possible to confound the early stage of myelitis of the anterior horn with meningitis. But in the latter the mental disturbance is much more marked and of longer duration; the cranial nerves may be seriously implicated, the sensory as well as the motor, which never happens in myelitis of the anterior horn; there is usually also the retraction of the head characteristic of meningitis; and the paralysis is almost invariably hemiplegic in distribution, while hemiplegia is extremely infrequent in myelitis of the anterior horn, and this hemiplegic paralysis is never succeeded by atrophy, except from years of disease.

The ordinary neuritis of a mixed nerve generally causes considerable and continuous pain, œdema, and hot and glossy skin; and the chronic form is distinguishable by the disproportion between the pain and the paralysis and atrophy, as well as often by the fact that it is confined to one nerve-trunk, or even one branch of a nerve-trunk. In multiple neuritis, differentiation is made easy by the infectious history, in some cases the malarious neighborhood, the continuous pains in both lower extremities, the steady progress within a week or two of the bilateral paralysis and atrophy, at the same time that the painful symptoms persist.

The extensor paralysis of lead palsy, conjoined with the lead line on the gums, colic, and history of exposures to lead, ought never to permit of confusion in diagnosis.

Atrophy from joint disease is too easily recognized to need more than a mere mention.

It is only necessary to call attention to the possibility of hysteria simulating a myelitis of the anterior horn, because the lack of the atrophy and of the electrical alterations and the presence of an unimpaired tendon reflex will demonstrate that the anterior cornua are not affected, even though there may be some doubt as to the existence of a motor paralysis.

Prognosis.—The prognosis of these different forms of disease of the neuro-muscular apparatus varies. In myelitis of the anterior horn the rule is that there is always a certain incurable residue of paralysis. In the acute forms the amount of this can not be determined for several weeks, and not for months in the chronic forms. Glosso-labio-laryngeal paralysis is always fatal. Progressive ophthalmoplegia is sometimes recovered from, though the majority of cases are fatal. Muscular pseudo-hypertrophy is incurable. Progressive muscular atrophy usually runs a chronic course and ends in death after years of duration; but there is a doubt at the present day as to whether the purely muscular forms are not amenable to treatment. Schultze details a remarkable cure, and I have seen great improvement in several cases in which the muscular pain was so great as to seemingly warrant the diagnosis of diffused neuritis.

Treatment.—The treatment of all the different forms of disease of the neuro-muscular apparatus is essentially the same in its general principles, except that the acute forms of myelitis of the anterior horn may be accompanied by reflex disturbances calling for special treatment—such as fever, coma, convulsions, etc. In the main, however, the therapeutic items are these: Rest, electricity, massage, and drugs.

Rest is of prime importance to a muscle or nerve degeneration from any cause whatsoever. I have never yet failed to obtain some improvement by rest in any case of muscular atrophy if there was any muscular tissue remaining. The rest should be proportioned to the extent and acuteness of the disease. In wide-spread or acute atrophy rest should be absolute in bed for weeks, or a month. In more localized disease the rest need not be so radical. In every case, however, and at every stage, it should be borne in mind that fatigue is to be avoided.

The electrical treatment should be by means of galvanic, faradaic, and static currents, and should be addressed to the spinal cord, the motor nerves, and the muscles themselves. Galvanism of the spine should be by means of large electrodes, one being placed over the upper cervical region and the other in the lower dorsal, and the duration of the application should be from five to ten minutes, and the current should vary from five to thirty milliampères. It will be observed that I am no believer in the short applications and feeble currents that are so much vaunted by the German authorities. Patients become used to electricity as they do to any drug, with this difference—that the larger doses of electricity, unlike the larger doses of many drugs, will cause no ill effects. But the idiosyncrasy of each patient will vary in regard to the quantity of electricity that can be taken, and this must be ascertained. Usually, however, the strength will vary between the figures I have mentioned. Galvanism and faradaism should be applied to the affected nerves and muscles at what are known as the "motor points," a description of which can be found in any text-book of electricity. The motor points will indicate the nerve-trunks and the motor filaments going into the muscles, and it is precisely at these spots that galvanic and faradaic currents must be applied. Here the quantity of galvanism should be much smaller, and should vary from two to ten milliampères, care being taken not to cause any painful sensation. A gentle faradaic current will be quite sufficient, and the application should be from five to ten minutes. In some cases I have derived considerable benefit from an application of the gentle faradaic current from thirty to sixty minutes, flat sponge electrodes being fastened on to the affected muscles by means of elastic bands. Static electricity will be found of use in certain cases of greatly atrophied muscle, and, as Charcot has pointed out, contractions can sometimes be obtained by this form of electricity when it is impossible to obtain them by galvanism or faradaism.

Massage can be used with great advantage in the chronic forms, or in the chronic or later stages of the acute forms. It should always be limited in duration from five to twenty minutes, and should be very gentle, special care being taken not to gripe the muscle or irritate it mechanically in any way. Massage is, however, a very uncertain agent, in spite of all the praise that it is nowadays the fashion to bestow upon it, and it should be carefully determined in each individual case as to whether the manipulation of the muscle is beneficial or not. In some cases it is positively harmful, and in these it should be abandoned.

Except in the acute or subacute forms of myelitis of the anterior horn and progressive ophthalmoplegia, drugs are usually of little use, and we can only employ them empirically. Iodide of potassium, ergot (either in the form of the fluid extract or in that of ergotine), and strychnine may be used, but I am bound to say that I have never seen any tangible effects from them.

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THOUGHTS ON THE SURGICAL TREATMENT OF PSEUDO-MEMBRANOUS LARYNGITIS.*

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Several months since, in conversation with a number of medical friends, the subject of surgical relief in the treatment of pseudo-membranous laryngitis was brought up, and I was a good deal surprised to hear the various opinions expressed in regard to the advisability of operative interference by gentlemen of long and large experience, of close observation, and of deliberate judgment. One thought that tracheotomy did little good in croup and diphtheria; another's experience led him to think that patients with these diseases stood a better chance of recovery without the operation than with it; another would be willing to operate if it was desired; still another, to show his lack of confidence in the benefit of the operation, would resort to it only when the patient was moribund. I believe these opinions express fairly well the feeling of a considerable number of the medical profession; and it seemed to me that the single point in the treatment of pseudo-membranous laryngitis that relates to the advisability of surgical interference in this condition might profitably be made the subject of discussion by this society this evening, for I can not help thinking that the general experience of the profession will warrant us in taking the position that if the opinions already cited were at all common in the profession, many patients would die whose lives might be saved, and a very great many more would suffer great distress that the surgeon is in a position to prevent or relieve. When an operation is proposed, we ought always, I think, to lay plainly before the parents or friends what the chances of recovery are without the operation, and what the subsequent history of the case is likely to be if the patient is not operated upon, that an intelligent choice may be made by those on whom the responsibility rests of accepting or declining the aid that the surgeon offers. The rather loose statement is made that many of these patients recover without any operation; but I have found it quite impossible to reach any reliable conclusion as to anything like an exact percentage of those that do so recover. In order to be examples of this exceptional termination, they must have, besides loss of voice and paroxysms of ever so severe breathing, a continuous labored respiration that is manifested by the at least moderate sinking in of the soft tissues above the sternum and at the epigastrium in inspiration. Where the breathing is obstructed, but short of the degree above mentioned, we have all certainly seen relief come either spontaneously or as the result of medical treatment. Personally, I have never happened to see relief take place from such a condition, nor have I heard of its occurrence in cases that I have seen in consultation, although I am well aware that it does occur. In order to get at some reliable data on this point and some others, as well, on the advisability of operating in these cases, I had a careful search made of the journals in the Surgeon-General's office at Washington, and, although I received a good deal of matter of interest on some points which are well enough understood—matter that would be entirely out of place in this paper—the only statement bearing on the point now under discussion was, "It has been estimated by some authorities that of those not operated on, not one in fifty recovers" (D. W. Cheever, "Med. and Surg. Rep., Boston City Hospital," 1870, p. 500). The context would seem to indicate that this statement related to *all* cases of laryngeal obstruction of a croupous or diphtheritic character. Lovett and Monro ("Am. Journal of the Med. Sciences," July, 1887, p. 166) state, on this subject: "Steiner has seen only three recoveries of this sort. Mackenzie sets the death-rate without operation at 90 per cent., and in thirty-three cases of croup treated medically many years ago by Dr. John Ware, thirty died. On the other hand are arranged Lewis Smith, Meigs and Pepper, and Agnew, who believe that recovery without operation is more frequent than has commonly been supposed. The experience at the City Hospital [Boston] has been as follows: Forty cases of diphtheritic croup have been treated medically, and every one died. Dr. G. W. Gay, visiting surgeon, wrote, in 1886: 'Not a single case of pseudo-membranous laryngitis has ever recovered in this hospital without operation.' And he quotes Dr. D. W. Cheever, senior visiting surgeon, as writing to him in 1884: 'After reflection, I can not recall a case of membranous laryngitis that I have known to recover without tracheotomy.' Since Dr. Gay's article there have been two recoveries from moderate dyspnœa without operation." In addition to the experience above quoted, it is a thing to be prominently noticed that surgical writers, with few exceptions, make the statement that when medical treatment has failed to arrest the disease, and an already present asphyxia threatens to become complete, our only hope is in tracheotomy. Such an unqualified statement would certainly not be made by these writers if they had seen any considerable number of recoveries without operation. It seems to me, therefore, that with reference to this important point we may safely say that a very small percentage of cases end in spontaneous recovery—probably two per cent. would include all such cases; and that when recovery does take place in these cases it does so by what, in our ignorance of its causes, we call chance, a thing that we as surgeons can do nothing to favor, and that ought not to enter into consideration of what is the best thing to be done in the interest of the patient.

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* Read before the New York Surgical Society, April 11, 1888.

In regard to the history of the case, if the operation is not done, my experience has been that death is not nearly so painful as I was at first led to think. I make this statement with some hesitation, in view of the fact that many authors advise the operation on the ground that, even if the case has a fatal termination, the distress is less than without it. I am speaking now, of course, of those cases where dyspnœa is due simply to mechanical causes. Where patients have died from laryngeal obstruction alone the picture has always been the same—gradually increasing restlessness and dyspnœa, with paroxysms of spasm added at times, and threatening death; then the spasm is relieved in a few moments, but a very considerable amount of distress continues, and then a rather rapid development of unconsciousness, the coma continuing for several hours and the patient dying quietly, the breathing being still obstructed. And this is so uniform, in my experience, that I have been in the habit of telling the patient's friends that, even if the operation is not done, the patient will not choke to death with great struggling and distress, but will die unconscious and with comparative ease. I should be glad to know how far the experience of the members of the society gives support to this position. The same change takes place, of course, minus the laryngeal spasm, in those cases where death is due to extension of the membrane below the tube, and due to the same condition of imperfect aeration of the blood with its effects on the brain and on the circulation.

My own personal experience in the treatment of pseudo-membranous laryngitis by surgical interference comprises only twelve cases; and if I drew my conclusions from these cases alone, I should feel indisposed to urge operative aid, even though I might be willing to resort to it if desired. But one's personal experience, especially when limited to a few cases, should never be made the basis of dogmatic conclusions, but rather be put into the common fund of knowledge, from which broad and discriminating and exact deductions can be drawn. Of these twelve cases, in every one there was a condition of such well-marked and continuous dyspnœa, that had lasted at least two hours, that there could be no doubt in the mind of any surgeon who advocates the operation that each one was a proper case for surgical relief. In some the dyspnœa had lasted longer, and in several so prolonged had the dyspnœa been that the operation was done with the hope, but without the expectation, of a successful final issue. The ages varied between ten months and twenty-one years; the disease in seven cases was diphtheria and in five croup; the day of the disease, from the second to the sixth day; all were anæsthetized with ether or chloroform except one, an adult. In none was there dangerous hæmorrhage, and in three the hæmorrhage was not even troublesome. In all, except one case, the relief to the breathing was immediate and complete, although subsequent dyspnœa, from extension of the membrane below the tube, was developed in several of the cases. In every case, except one, the operation was in no way responsible for the death of the patient; but I am persuaded (but can not, of course, prove) that life was prolonged by it. The result in each case, except one, was death, and this case where recovery took place was one of croup in a male child, seven years of age, operated upon in St. Peter's Hospital, Brooklyn, on the sixth day of the disease. In one case of a child, six years of age, suffering with diphtheria, operated on on the fourth day, death took place in about fifteen minutes after the introduction of the tube, apparently from shock. In this case I believe the child would not have died so soon if the operation had not been performed. In every case in which I have performed tracheotomy I have given the relief to the breathing that could fairly be expected from the operation, and in no case, except in the case of death on the table, has there been any regret expressed on the part of the parents or friends that the operation had been done; but, on the contrary, there has been satisfaction felt and expressed that even temporary ease had been furnished.

I think the examination of large numbers of cases of either croup or diphtheria in which tracheotomy has been practiced will bear out the statement that, in the vast majority of cases, it does good immediately the tube is introduced, that the patients do better with it than without it, and that a very considerable number of patients are not only temporarily relieved, but ultimately recover from the disease. In advising the operation, we recommend a procedure that substitutes for a chance an exact surgical measure that will accomplish its object in all but a few cases.

And, while making this statement, I bear in mind all that is disagreeable, difficult, or dangerous in the performance of the operation in the way of hæmorrhage, complete asphyxia, etc., with which we are all familiar. The article in the "American Journal of the Medical Sciences," already mentioned, gives, in tabulated form, the percentage of recoveries in 21,853 cases of croup and diphtheria—6,135 recoveries and 15,552 deaths—or 28 per cent. recovered, and this varies from 24 per cent. among French authors to 31 per cent. among German authors. No allegation of anything approximating such a percentage of recoveries has ever been made, so far as I am aware, for any method of treatment without surgical aid. And we are advised by some to deprive our patients of a fair prospect of recovery on account of the risks of the operation, and offer them the small probability of spontaneous relief. These carefully prepared tables of statistics, however, are calculated to make us lose sight of one of the chief objects of tracheotomy, inasmuch as they all represent percentages of recovery from disease, and not relief from the condition of laryngeal obstruction. They are, of course, entirely different things. The operation is on the same footing as any of the medicinal agents that are used in the course of treatment, and the objection raised against tracheotomy, that only 28 per cent. of the patients recover, is just as forcible against stimulants and nourishment, excepting always its small risks; and the surgeon might with equal propriety argue against the use of means to check a pulmonary hæmorrhage, on the ground that 90 per cent. of the patients would die of phthisis, even if the hæmorrhage was checked.

It seems to me that if tracheotomy is resorted to, not as a last resort, but at an early stage of the disease—as soon as the breathing has become markedly and continuously obstructed—it can be as confidently expected to accomplish its purpose as most surgical operations. The only positive contra-indication to its adoption would be the presence of the cause of obstruction below any point where the tube could safely be introduced. But, with this exception, we are from time to time reminded, by resort to tracheotomy, that the operation is a justifiable one even in apparently hopeless conditions, and that lives are saved when death was the only termination that could reasonably be anticipated. Each case must be considered by itself, and our advice for or against an operation be given only after due consideration of every element in the case that could affect the prognosis, and there our responsibility, as regards the advisability of the operation, ends. My attitude toward these cases would be, not that there should be a good reason for doing the operation, but that every patient with severe and continuous dyspnœa is entitled to the benefit of tracheotomy unless there is good reason for not doing it.

A discussion of the subject under consideration would be incomplete if the matter of intubation were omitted; yet, from lack of any experience of my own on the living subject with intubation, I can only present some thoughts based on the observations of others. Our attention has been directed to the supposed advantages of intubation over tracheotomy, and it is maintained for it that it is easily performed and instantaneous in its results; that it avoids the making of a wound and the risks run through hæmorrhage, shock, subsequent pneumonia, inspiration of dry air, removal of the tube, and possible imperfect healing, etc., of the wound; that the tubes clean themselves, are easily coughed up if obstructed by membrane, require no skilled nursing, and involve no after-treatment; while there are some acknowledged dangers—such as injury to the larynx in introducing the tube, pushing membrane before the tube, and the passage of food through the tube. Some of these advantages are manifest enough—such as the rapidity of its performance, and the avoidance of all the risks of tracheotomy—but the evidence, I think, is still inconclusive that it is very easy of performance and free from shock, or that it has less risks of pneumonia; indeed, from what we know of pulmonary hæmorrhage, I should be disposed to think the danger was greater from particles of food passing through the tube than from blood trickling in from the tracheal opening, and, inasmuch as it is easy to furnish moist air through the trachea, the advantage of the laryngeal tube is more apparent than real. The testimony in regard to the removal of the tube is contradictory; if it is coughed up easily it has not much to recommend it, and if it is removed with difficulty artificially it becomes a much greater source of danger than the tracheal tube, and would require more skill to attend to it than even the trained nurse possesses. I can not understand how the tubes can clean themselves. That many of the objectionable features of intubation will be removal by those who are advocating its use so temperately, and its dangers in some measure be overcome, can not be doubted. Its statistics up to the present time, on the whole, fall rather below those of tracheotomy, except in very young children. And I think we are justified in indorsing the conclusion of Dr. Charles E. Sajous ("A Study of the Principal Objectionable Features in Intubation," "N. Y. Med. Jour.," July 23, 1887, p. 95). In comparing intubation with tracheotomy he says: "It does not compete with the latter, therefore, but stands second to it, to be resorted to when the former is not permitted. This secondary position it has about held for the past year, and since, as time advances, there does not seem to be an increase in the proportionate number of recoveries, the profession is gradually becoming accustomed to intubation in the light of an easier, but less promising, operation than tracheotomy."

APPARATUS FOR RECORDING LATERAL CURVATURES OF THE SPINE.

By CHARLES L. SCUDDER, Boston,
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I am aware of no apparatus constructed in America for recording and measuring the curves of the body and at the same time reducing them to convenient size. Various contrivances have been in use in Germany for these purposes. A very exhaustive article by Dr. Wilhelm Schulthess, of Zürich, appeared in the "Centralblatt für orthopädische Chirurgie" in April, 1887, in which he classifies all methods used up to that date for recording lateral curves of the spine into four groups—

1. With instruments by which measurements alone are made from fixed points either on the body or outside the body. Of such are the instruments of Heinecke[*] and Mikulicz.[†]

2. With instruments by which an outline is taken with or without measurements. Such are the instruments of Gramcko[‡] and Ad. Pansch[#] and H. Virchow,[‖] and the instrument described by Schulthess in the article referred to above.

3. Methods by photography.

4. By the construction of casts of plaster of Paris.

Orthopædic surgeons are demanding each year, in both private and hospital practice, more accurate means than are at present used for the recording of the various deformities of the human body.

The pathology and the rational treatment of lateral curvature of the spine are better understood to-day than ever before, but there is no method in vogue by which the progress of such cases can be intelligently and conveniently followed.

Too often is the deviation of the line of the spinous processes of the vertebræ from a straight line made the sole criterion as to the existence or not of lateral curvature of the spine. The establishment of some fixed relations between deviation of the spinous processes of the vertebræ and rotation of the bodies of the vertebræ may greatly assist the general practitioner in detecting early cases of this insidious disease.

It is supposed, although not definitely proved, that rotation may precede and exist entirely independent of any lateral deviation of the spinous processes.

The cuts showing the apparatus to be described in this paper are sufficiently clear, and the apparatus itself is so simply constructed that a few words will suffice to explain its working.

The apparatus consists of three uprights (Fig. 1—1, 2, 3), all in one plane, and a fourth upright (4) opposite to (2) and in a plane at right angles. These uprights are firmly held by cross-pieces above and below. Between the uprights (1, 2) is a board movable up and down on brass bearings at each corner, which can be held fixed at any height by wire stops (Fig. 1, *a* and *b*). This board carries paper for the record, and also a pantograph. The construction and manner of working of the pantograph it is unnecessary to explain. A word is, however, necessary as to its application here. At the point (*c*, Fig. 1) is a pencil fixed firmly. The end of the long arm of the pantograph is arranged to carry a pointer either at right angles to the plane of the uprights (1, 2, 3), (see Fig. 2, *d*), or in the same plane with that of the uprights (see Fig. 4, *e*).

An extension piece is adjustable at right angles to the long arm, carrying a pointer swiveled for convenience to travel through an arc of 90° (see Fig. 1, *f*). The pantograph may be hung from a hook on the top of the board when not in use (Fig. 1, *g*).

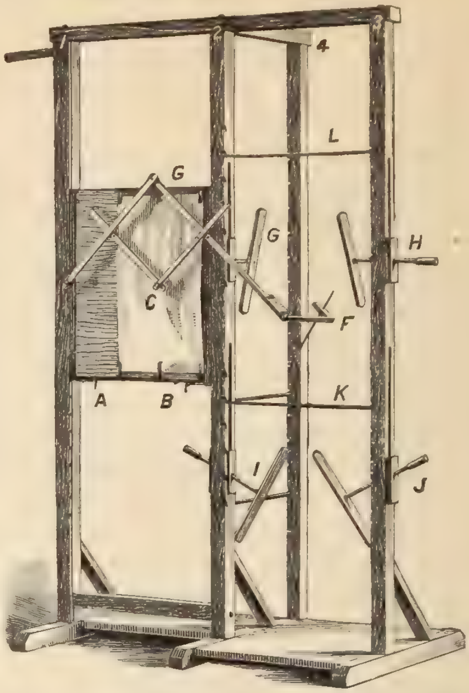

Fig. 1.

In the uprights 2 and 3 are slots in which run blocks (Fig. 1, *g*, *h*, *i*, *j*) holding threaded hand-screws of wood. Upon the ends of these hand-screws are plates. Placed between these same uprights are two rods of brass movable up and down (Fig. 1, *k*, *l*). Between uprights 2 and 4 are two similar brass rods.

Connected with the upright No. 1, on the side away from the board, is a simple sliding-rod with a scale attached for recording the height of the patient.

Now a word as to the manner of using the apparatus. The patient is stripped of all clothing to below the hips. The spinous processes of the several vertebræ and the inferior angle of each scapula are marked on the skin with a black crayon, the arms hanging naturally at the side. The patient then stands as is shown in Fig. 2. The four plates are adjusted by the screws so as to touch the patient lightly on each shoulder and hip. Any lateral movement is thus prevented. The two brass rods are so placed as to touch the neck and thighs, and thus to prevent any antero-posterior swaying of the body.

The patient is now fixed in position.

The board holding the pantograph is brought into proper position. The paper upon which the tracing is to be made is put in place upon the board.

The surgeon then steadies the pencil of the pantograph with the left hand, while with the right hand he touches with the pointer the black marks on the back corresponding with the spinous processes of the vertebræ and the inferior angles of the scapulæ. He then places the pointer upon the sides of the neck, and traces down the neck and over the top of each shoulder. To allow the pointer to adapt itself to the antero-posterior curves of the back, the pointer is fitted to a hole through the end of the pantograph, in which it slides with ease. This lengthening and shortening of the pointer permits the side of the neck to be reached by the tip. The pointer is then placed where the inner side of the arm meets the body. The hips and the inner side of the arms are traced.

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[*] "Illustrirte Monatsschrift der ärztlichen Polytechnik," 1882, Heft 2.

[†] "Centralblatt für Chirurgie," 1883, 305.

[‡] "Berliner klinische Wochenschrift," 43, 1881.

[#] "Anatomische Vorlesungen für Aerzte und ältere Studirende," 1. Theil.

[‖] "Berliner klinische Wochenschrift," 28, 1886.

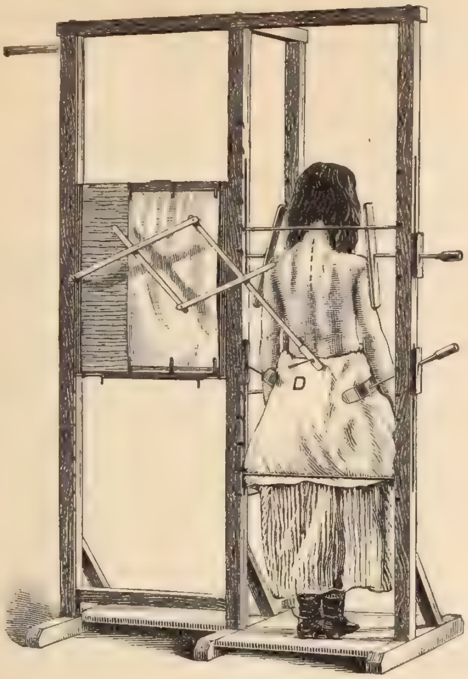

FIG. 2.

Now the patient stands as is represented in Fig. 3, steadied by resting naturally against the brass rods between uprights No. 2 and No. 4. The right-angled extension piece is adjusted, and, by steadying the pencil, the surgeon carries, as before, with the right hand, the pointer downward from the seventh cervical vertebra the whole length of the back, keeping it always in contact with the skin. Cases of Pott's disease of the spine, with or without much kyphosis, may be thus recorded.

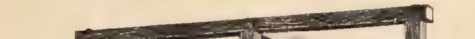

FIG. 3.

The patient next stands as in Fig. 4, leaning over, with hands outstretched, upon a flat surface of such a height as to bring the plane of the back horizontal. The side-pads are adjusted, and a support, not represented in the figure, is given to the shoulders on either side of the neck to prevent any swaying of the body forward and backward.

The pointer is placed in the long arm in the same plane as the plane of the paper for recording the curve, and at right angles to the plane of the back. Steadying the pencil as before, the right hand of the surgeon moves the pointer, in contact with the back, from one to the other posterior axillary folds. The patient is placed so as to bring the tracing through the highest of the marks locating the inferior angles of the scapulæ.

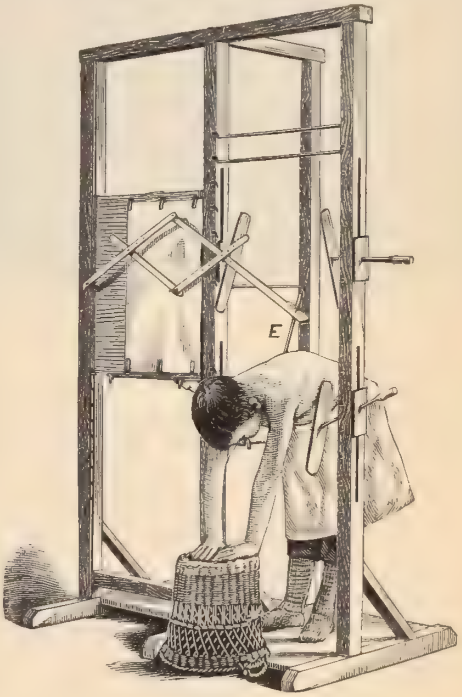

FIG. 4.

Slight differences in the weight borne by the hands make little or no variation in the curves of the back. Thus is obtained the curve of rotation of the dorsal vertebræ. In the same manner may be obtained the curve of rotation of the lumbar vertebræ.

This apparatus, therefore, records

1. The lateral curve of the spinous processes of the vertebræ.
2. The outline and height and breadth of the shoulders.
3. The outline and height and breadth of the hips.
4. The relations between the arms in the natural position and the outline of the hips.
5. The distances of the scapulæ from the spines.
6. The antero-posterior curves of the back.
7. The curve of rotation in the dorsal region.
8. The curve of rotation in the lumbar region.

By adjusting the pantograph to different lengths of its rods, the tracing of these various curves may be reduced in size, and thus be made convenient for records.

Measurements may be made of the back from these reduced curves. For, suppose a given tracing is one third as large as life, and the paper upon which the tracing is taken is ruled into squares, each side of which is one third of an inch, then each square's side represents one inch of the life-size curve. This is illustrated in Fig. 5.

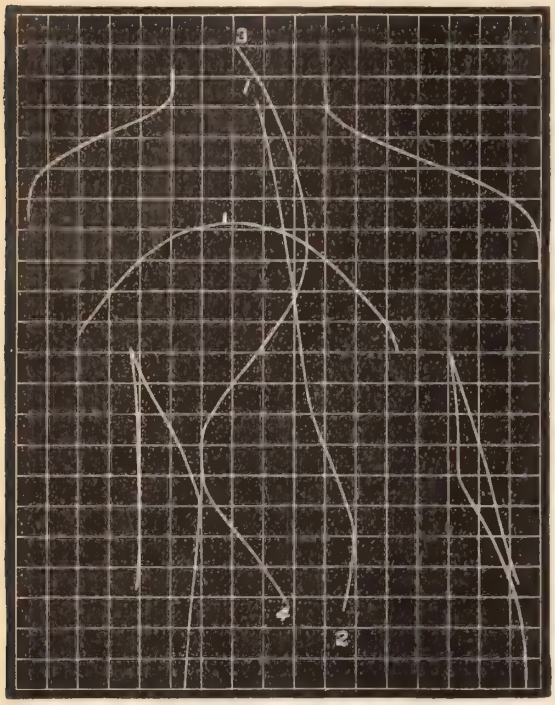

Fig. 5.—Hemiplegia, girl eleven years old. Each space represents one inch actual measurement. 1–2 = lateral curve; 3–4 = antero-posterior curve.

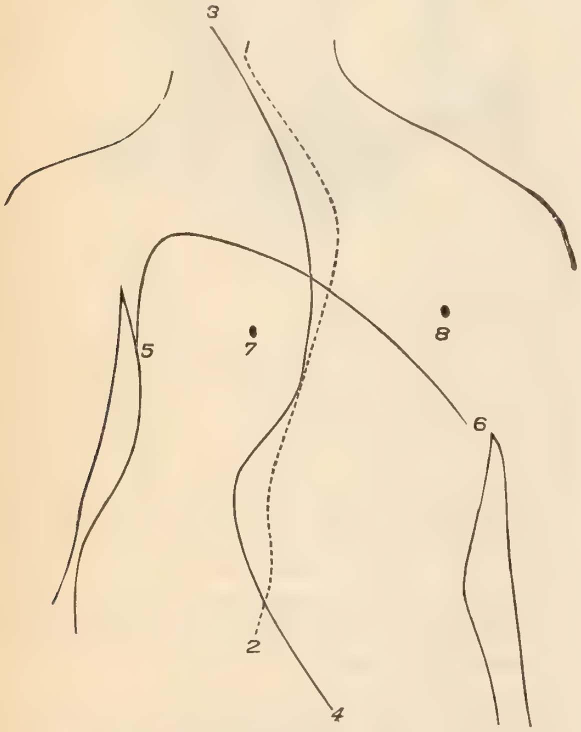

Fig. 6.—Lateral curvature, girl fifteen years old. 7 and 8 = the inferior angles of the scapulæ.

Figs. 6, 7, and 8 explain themselves, and are reduced tracings taken with the above-described apparatus. The curve 5–6 represents the reverse of the curve of rotation in the dorsal region—*i. e.*, the portion of the curve to the right of the figure corresponds to the actual curve on the left of the child, and *vice versa.* No lumbar curve was taken in these particular cases.

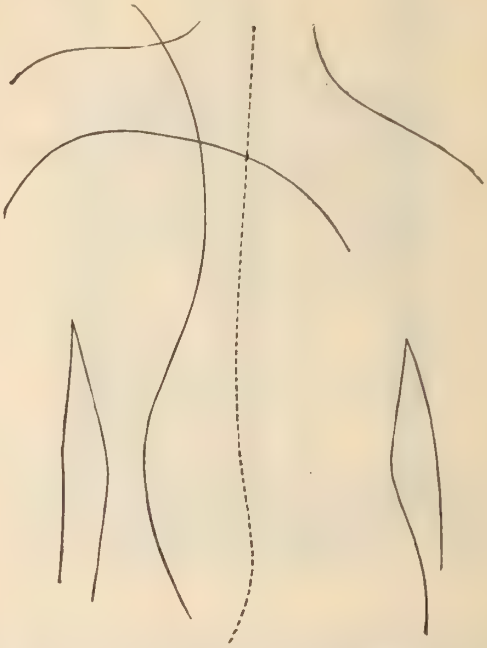

Fig. 7.—Recovery from morbus coxæ of left leg, girl twelve years old.

Perfect fixation of the patient in a position which shall always be a constant one is the great thing to be sought for in accurate measurements and tracings. The present apparatus is not perfected, and is only the beginning of what is hoped will prove to be an accurate and ready method, especially in hospital practice, of recording cases of lateral curvature of the spine.

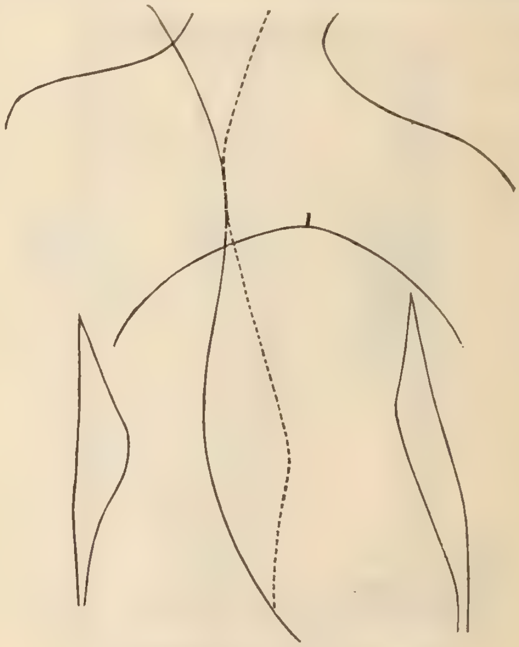

Fig. 8.—Lateral curvature, girl twelve years old.

I wish to thank Dr. E. H. Bradford and Dr. H. L. Burrell, of the Children's Hospital, Boston, for many suggestions which have enabled me to finish this piece of apparatus, and for their kindness in allowing me to experiment at the hospital in its use.

THE PRESENT STATUS OF THE TREATMENT OF ROTARY LATERAL CURVATURE OF THE SPINE.*

By SAMUEL KETCH, M. D.,

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In bringing the subject of the present status of the treatment of rotary lateral curvature of the spine before you this evening it will be my object to discuss, and bring out a discussion of, a condition which I am sure has given rise to more theories and, as a result of these, more ingenuity in the means devised for the relief of a deformity presenting greater obstacles to success than any other encountered by the orthopædic surgeon.

In doing so it will not be my endeavor to present any new or startling hypothesis or to confront you with complex apparatus for the accomplishment of this purpose, but rather to show what has been or is being done, and to present our needs rather than our deeds. It is a fact well known to both the physician and the surgeon, lamentable as it seems, that as our knowledge of pathology and ætiology has increased, our therapeutic forces have not always kept stride with these discoveries. This being true in many instances where both pathology and ætiology are clear and without question, how much more true is it when even these elements are in dispute, and where, by the nature of the disease, few opportunities are given us for the clearing up of the problem! Although it is incompatible with the limits of this paper to give a lengthy account of the pathology and ætiology of rotary lateral curvature of the spine, it still will be well to enter briefly into some of the more important facts connected with this deformity.

In speaking of rotary lateral curvature of the spine, I wish most emphatically to be understood as referring here only to typical cases, in no sense including many curvatures which, while having the lateral element present and found in connection with many causes, are still not typical rotary curvatures.

First, then, it may be well to ask, What is a rotary lateral curvature of the spine? And this I would define briefly as follows:

A rotary lateral curvature of the spine is that lateral deviation of a portion or whole of the vertebral column which has as its most constant factor the rotation, torsion, or twisting of the bodies or segments of the bodies of the vertebræ, with accompanying or consecutive alterations in the shape of the thorax. Having thus briefly defined this deformity, the natural history of the disease will occupy our attention for a few moments. It can not have failed to impress itself strongly on those present that the progress of the typical lateral curvature is very slow, but nevertheless constant and progressive, and where we have the opportunity of studying its first manifestations (although this does not imply its origin), as in children, it gives no indications of assuming the distressing proportions which, untreated, many of the cases attain. This tendency to deformity, beginning with slight alteration of form, such as an elevated shoulder, slight prominence of the ribs, protuberant hip, with very little rotation (for I believe rotation to be one of the earliest symptoms), all of these unattended, as in inflammatory lesions, by Nature's warning—pain—is in itself considered as a rule unimportant by those not familiar with the nature of the disease, and not at all apt to result in the most malignant of deformities.

In using the expression malignant, I do so advisedly, for, while it is not intended to convey the idea of a fatal issue—as, for instance, we should employ the term in speaking of cancer—no other word sufficiently emphasizes the inveterate disposition of the deformity to increase. Furthermore, no deformity with which we are brought into contact exhibits in its slow, insidious progression, in its involvement of area, in its secondary effects on important internal organs, such decided alterations of form and such marked disturbances of function as rotary lateral curvature of the spine.

This, you will doubtless say, presents a picture of the worst cases of scoliosis, and this is undoubtedly true; but who among us would have the temerity to say when and where a rotary lateral curvature would end it left to its natural course? If it is true that the picture I have presented describes the worst cases, it will be also fair to ask, Why are they so? And I think the answer must be one of three. Either that they have presented themselves too late for the prevention of further deformity, or they have not received proper care, or they have had no treatment at all. It is true that many cases go to a certain amount of deformity and then cease, even if untreated, but this is not the ordinary tendency of the disease, and prognosis has not as yet reached such accuracy as will determine this self-limitation in a small number of cases. When it becomes recognized that what we are endeavoring to treat is but the effect of some cause, some irritation, if I may be allowed the use of such a term, the exact nature of which is as yet unknown to us, it will be seen that the problem of treatment embraces something more than the attempt to remove the mechanical results of such cause by the use of opposing mechanical means. This brings us directly to the present status of the treatment of rotary lateral curvature, and this may be tersely stated as consisting principally of two methods, or a combination of the two. I refer to the treatment by apparatus, or the conjoined use of apparatus and exercises.

I do not think in this connection it will be necessary to enter into a discussion of the treatment by complete recumbency or cutting (tenotomy) of spinal muscles, they being rarely employed at present, although both measures may be useful adjuncts at times.

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* Read before the Orthopædic Section of the New York Academy of Medicine, March 16, 1888.

The treatment by apparatus will be the first to receive attention.

It would be superfluous to go into an extensive account of all the varieties of apparatus used for the treatment of lateral curvature. They are, like the "sands on the seashore," innumerable, and, like the sands, have been buffeted by the angry waves of discussion until their merits are either acknowledged or their defects have rendered them useless.

At the present day, apparatus for the relief of lateral curvature may be described under two varieties—progressive or active, and fixative or passive. The first variety, or progressive apparatus, is the one where the lever or spring-action is employed with the idea of gradually pushing the spine into better position by pressure directed against the greatest convexity of the curve, the apparatus being so arranged that improvement, if any, can be constantly followed up by the surgeon, or, as used by some, for the simple purpose of retaining the spine in a good position by continuous, though moderate, pressure, the position having been previously obtained by proper exercises. I can not condemn too severely the faulty use of this principle in the treatment of lateral curvature by the use of heavy, cumbersome braces, the constant action and abnormal pressure of which often give rise to large excoriations and even sloughs of the skin, and I am sorry to say that this is constantly occurring, especially in cases sent for treatment to instrument-makers, to whom, unfortunately, many of these patients drift, and with whom they remain until it is too late to improve their condition. In my opinion, no active brace should be used in this class of cases for any other purpose than simply that of retaining the spine in an improved position, previously obtained either by appropriate manual exercises or combined manual and gymnastic movements. Under all circumstances these braces should be so constructed that their modification can be accomplished by the surgeon himself, and, furthermore, they should be light, easily removable to allow of inspection of the parts, and simple enough in their plan of action to be properly applied and adjusted by those having the home care of the patient.

The second class, or fixation apparatus, were originally constructed with the idea of firmly immobilizing the distorted spine in an improved position, the patient having been previously suspended or extended. This original plan has been modified to the extent of opening in front, and afterward lacing, the brace thus constructed, whether made of plaster of Paris, poroplastic felt, leather, or other substances, with the object of easy removal or renewal, and also in order to give proper exercise and attention to the subjacent parts.

Of exercises in the treatment of rotary lateral curvature the same remarks might be pertinent, so far as their number and variety are concerned, as have already been made in speaking of apparatus. There is, however, one thing in regard to them which I shall venture to bring before you. Conceding, as we all do, the undoubted value of proper exercises as adjuvants to our treatment, whether we use the force of gravity to pull the spine straight, by means of swinging, self-suspension, or a trapeze, or by automatic movements on the part of the patient, or by attempts to improve the general muscular tone—of all these I attach most importance to those exercises which have for their object the "unfolding" of the twisted vertebral column. These, I believe, can be applied with the greatest precision and benefit by means of the surgeon's hands. The importance of manual force has not been overlooked by surgeons in their attempts to relieve other deformities, and no appliance can rival the ease, proper application of pressure, and safety which manual exercises give us. Their success, however, as in all other orthopædic procedures, is a matter of detail, and these manual exercises should be given either by the surgeon himself or by an assistant whom he has personally and thoroughly trained.

Without entering into an extensive discussion of the comparative excellences of the two general varieties of apparatus which I have so hastily and imperfectly sketched, I shall at once proceed to the consideration of what is meant by a cure in speaking of rotary lateral curvature.

A cure of rotary lateral curvature would, to my mind, not only mean a restoration of the lateral deviation to the normal vertical position of the vertebral column, with its normal curves, but also the disappearance of that most constant factor and menace—the rotation—for as long as rotation exists we can not be said to have a normal spine.

As far as I have been able to judge from my own experience—and this has been based on the observation of a large number of cases, seen not alone in my own practice in public institutions, but also in the practice of other orthopædic surgeons—a cure would seem to imply one of two things: either the prevention of further deformity, or an amelioration of the condition originally observed. I hope, therefore, that I shall not be considered as detracting from the efforts of American surgeons when I state that, while I fully recognize the advances made in our treatment of joint and spinal diseases, especially of the inflammatory type, by no means that I have seen employed have I been able to convince myself of the entire disappearance of rotation in these cases. And this symptom must be prevented or removed before we can consider the vertebral column as restored to a perfectly normal state. Often do we see a marked lateral deviation completely removed, but here we have not had the factor of rotation to contend with, and consequently can not be said to be dealing with a typical deformity such as I have intended to discuss in this paper.

The question then presents itself, Are we able at the present day, and by our modes of treatment, to remove this rotation? And this I am compelled to answer in the negative. It may be maintained that cases have been treated where the rotation entirely disappeared. If this is so, are there any constant means by which this end may be uniformly accomplished, and can we honestly promise our patients that this can positively be removed by treatment?

Having thus criticised our ability to cure the disease, in the fullest expression of the term, by the means at present employed, you have a perfect right to ask what is proposed in the place of this treatment, and whether there are any means by which we can more perfectly accomplish our ends. And this I answer as follows: In the way of apparatus, nothing new, for all apparatus will find their efficacy in the proper application of mechanical laws; but in the way of prevention

I think a great deal can be accomplished. Proper prophylactic measures in other diseases, and their importance, are fully recognized and insisted upon by the profession, but their value seems to have been overlooked in all writings on diseases of the articulations. The application of prophylactic laws to articular disease and deformity lies rather in the arrest of and prevention of chronicity than in eradication. In the present state of our art this will be the nearest approach to prophylaxis possible. Therefore it is only by the earliest recognition of the symptoms, and an appreciation of their importance, that this end—prevention—can be accomplished.

About two years ago I had the honor of presenting before this section some "Remarks on Lateral Curvature, with Special Reference to its Occurrence in Children."* These remarks were based on an analysis of two hundred and twenty-nine cases seen at the New York Orthopædic Dispensary, the histories of which were collected from the records of that institution, representing those of applicants for relief during the years 1878 to 1885, inclusive. These cases presented the typical deformity, rotation being present in all. I divided these cases into three classes, as follows:

1. Those where the deformity was first observed from the first to the twelfth year, or the age of childhood.
2. Those where the deformity was first observed from the twelfth to the eighteenth year, or the age of puberty.
3. Those where the deformity was first observed from the eighteenth year and upward, or the age of complete development.

As far as the purposes of this paper are concerned, I shall simply refer to those occurring in the first class, or period of childhood.

During this period the deformity occurred in one hundred and twenty cases, the proportion in this period to the whole number analyzed being fifty-two per cent., or over one half of the total number of cases. In analyzing these cases, I called particular attention to the fact that I had been very careful to ascertain the age at which the curvature was first observed, and not, as had been frequently done, the age at which the patient first presented for examination. From this analysis it would appear that far the greater number of cases of rotary lateral curvature presented in children, and, from the nature of the symptoms at the time of examination, it was fair to conclude that even at this time the deformity had been present for a long period. From the results of the analysis made at that time, I formulated several conclusions, to two of which I will call your attention this evening:

1. That rotary lateral curvature is principally a disease of childhood, and may be either congenital or acquired.
2. That rotary lateral curvature should be looked for early in life, and, as a factor to early treatment, the careful inspection of children's spines becomes most important toward a prevention of the deformity.

It is with these strong convictions, based on a study and analysis of a large number of cases, that I have ventured to call your attention to the prevention or the prophylaxis of this grave deformity. I do not mean to say that even if the spines of children received the utmost care, that even if at the first appearance or suspicion of a lateral deformity the child were taken to a surgeon for treatment, we should not have lateral curvatures, but I am convinced that the inveterate deformities now seen in so large a number, and which are living protests against the inefficacy of late treatment, would be few and far between.

In conclusion, I can not urge too strongly the importance of the careful examination of children's spines, especially upon those who see many children in their practice, and upon those having charge of infant institutions; and to you, as teachers and specialists in this department of surgery, I would make an earnest appeal for the promulgation of such lessons as will convince both the profession and the laity of the utility of watchfulness and early treatment in the prevention of the marked deformity consequent upon rotary lateral curvature of the spine.

328 West Twenty-ninth Street, New York.

Correspondence.

LETTER FROM LONDON.

Uric-acid Diseases.—The Pathology of Rheumatoid Arthritis.—The Function of the Bile.—The Summer Session.—Teaching Students to Think.

London, *May 1, 1888.*

At a meeting of the Royal Medical and Chirurgical Society last week Dr. Alexander Haig communicated the results of his investigations on uric acid in relation to disease. In a former paper he had endeavored to show that the chief value of the salicylates in uric-acid diseases lay in their preventing acids from causing retention of uric acid. Some drugs which had the opposite effect were considered in this second paper. They were chiefly lead, iron, and lithia, though the latter acted in an indirect manner. The relation of dyspepsia to the uric-acid headache, and the way in which it explained the periodicity of the attacks, were referred to. The presence of uric acid in the blood in chronic lead-poisoning was mentioned, and the action of lead in precipitating an attack of gout was held to accord with his views. Lead was one of the causes of epilepsy—a fact which was easy of explanation if epilepsy was due to uric acid. Iron caused a relapse in gout, and did harm in epilepsy and in uric-acid headache. He pointed out the grounds for his belief that some cases of epilepsy might be dependent upon uric acid, and called attention to the close clinical relationships between epilepsy and headache on the one hand, and between both and gout on the other. He suggested that epilepsy might be prevented by salicylates when it was due to accumulation of uric acid in the blood. He thought that fits of this class would perhaps be cured by diet, and he reminded his audience that it had been found that alkalies, given in combination with the bromides, enabled a smaller quantity of bromide to be used—a fact which strongly supported his view of the pathology of the disease.

Dr. A. E. Garrod, at the same meeting, made a further communication on rheumatoid arthritis, chiefly in regard to the muscular atrophy, deformities, and skin lesions, with special reference to their nerve origin. The skin changes he concluded were probably primary and perhaps the result of peripheral neuritis, while the muscular wasting and deformities were simply secondary to the joint affection; and he pointed out the necessity for excluding cases in which sensory and motor disturbances were produced by pressure on the motor-nerve roots when the disease had attacked the vertebral column.

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* "Medical Record," April 26, 1886.

A very important discovery, nothing less than that of the function of the bile, was announced at a late meeting of the Physiological Society, but, as that society conducts its affairs somewhat differently from the other societies, and as its proceedings are more or less of a secret, I am not able to supply any great amount of information on the paper. The fact remains, however, that Dr. Martin and Dr. Dawson Williams announced that they had found that the presence of bile very materially increased the action of the pancreatic juice. I believe they will shortly make a full statement of their experiments to the Royal Society, and until then we must be content with the knowledge of the bare fact, but the only wonder is that it has not occurred to any one before to investigate the effect of the bile on the pancreatic juice, seeing that they are poured into the duodenum so close together.

The summer session opens to-day at our medical schools, and every year sees a growing tendency to make it a more important event; but a few years ago it was almost unheard of that a man should enter except in October; now at some of the smaller schools a considerable accession of numbers is always confidently expected, and this year that great and conservative institution, St. Bartholomew's Hospital, has followed the lead of its younger and smaller brethren, and announced on a fly sheet the advantages accruing to the student from commencing his professional studies in the summer months. The chief advantage: as it has always appeared to me, and it is a very real one, is that the student has the chance of learning something about the bones, and he is thus much more fitted to go into the dissecting-room when October comes round than if he only entered then for the first time.

Speaking of the students reminds me of a sensible article in last week's "British Medical Journal," entitled "Teaching Students to Think." In it the writer regrets that the work of the first two years in the medical school is so soon forgotten, so that when in the wards during the latter part of his career the student is quite unable to apply what he has been taught of anatomy and physiology at the earlier part of his career, and the writer in question thinks that the blame lies with the teachers quite as much as with the students. To my thinking he has got the saddle on the wrong horse altogether. The fault lies entirely, or almost so, with the examiners. So long as examinations are conducted as they are at present, so long will students simply make them the whole aim and object of their existence, learn their work in a parrot-like manner, and forget it as soon as they are through; and I don't blame them, for the all-important thing to them is to get through the examination. Common sense is a most excellent quality in a medical man, but it is a dangerous commodity for a student to deal in at the examination-table, and the students of the present day are therefore wise in their generation in sticking closely to the text-books rather than trusting to the light of nature.

Tracheal Ozæna.—"According to M. Luc and some others, there exists," says the "Lancet," "a variety of tracheitis associated with nasal ozæna, but which, once established, evolves independently of the latter. The tracheitis is characterized by the fœtidity of its secretions, in which the microscope reveals the presence of micro-organisms similar to those found in the crusts from the nose in cases of ozæna. The scabs on the walls of the trachea do not proceed from the nose, but are autochthonous. The clinical characters of tracheal ozæna consist in expectoration, especially in the morning, of greenish sputa, thick, viscid, and exhaling the peculiar odor of ozæna, and the persistence of the fœtor of the breath after thorough cleansing of the nasal fossa. . . ."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MAY 19, 1888.

THE BUREAU OF ANIMAL INDUSTRY.

If the theory of protective inoculation is to become well rounded and thoroughly settled, and if its practice is to reach perfection, it can only be as the result of exhaustive studies upon certain questions that are subsidiary to the leading idea. One of the most important of these questions is that of whether a virus may retain its pathogenetic power, and therefore its protective efficiency, after it has been deprived of living micro-organisms; in other words, whether the virulence of a liquid depends wholly upon its containing such organisms or upon the presence of soluble products of metamorphosis induced by the germs at some previous time. At a recent meeting of the French Academy of Sciences, M. Pasteur declared that the settlement of this question was "of capital importance," and he expressed his gratification that it had been accomplished in his laboratory. "*Ma joie est grande,*" he is reported to have said, "*d'avoir pu être témoin de ce nouveau progrès réalisé dans mon laboratoire.*"

Pasteur must be conceded to have made the grandest contributions to the work of solving the problems connected with the ætiology and prevention of the infectious diseases, especially by his brilliant conception of the attenuation of viruses; but his statement that this particular question had been settled in his laboratory can not pass unchallenged, as is clearly shown in an admirable review of the subject, by Ferdinand Hueppe, in the "Fortschritte der Medicin" for April 15th. M. Chauveau supposed that he had proved the infecting quality of a virus free from living germs so long ago as 1880, but his demonstration has not been everywhere accepted as conclusive. He inoculated pregnant sheep, and showed that their lambs were born with an immunity to the disease (anthrax). His argument was that the micro-organisms of the virus with which the sheep had been inoculated could not have passed through the placenta and into the fœtal system, but only certain soluble chemical products. But other observers objected that the anthrax bacilli often passed from the maternal into the fœtal organism, and they rested their objection upon experiments made on guinea-pigs and rabbits. Chauveau replied that, whatever might be the case with those animals, such a transit of micro-organisms was very rare in the sheep; he therefore still maintained that probability sustained his explanation of the way in which the fœtal lambs had been infected. It is to be noted that M. Chauveau did not continue to assert the impossibility of the passage of the bacillus through the placenta, but only insisted upon its great rarity. His experiments, therefore, did not amount to a complete demonstration. This was at length furnished by our countrymen, Dr. D. E. Salmon and Dr. Theobald Smith, of the

Bureau of Animal Industry. In our issue for September 19, 1885, we published Dr. Salmon's article entitled "Immunity from Contagious Diseases," in which he gave an outline of the theory of infection held by him; and in the Journal for March 6, 1886, we gave a *résumé* of his and Dr. Smith's experiments subsequently reported to the Biological Society of Washington. In those experiments, performed on pigeons, with the virus of swine-plague, they avoided the element of uncertainty that had attached to Chauveau's supposed demonstration, and simply inoculated the birds with virus that had been subjected to a degree of heat sufficient to kill its micro-organisms. They reported further experiments at the Washington meeting of the International Medical Congress last year. Hueppe, in the article mentioned, gives them full credit for having settled the question, and we look upon it as a matter for congratulation that the decisive demonstration is to be attributed to our countrymen. The great practical importance of their researches should go far toward insuring adequate Congressional support of the Bureau of Animal Industry, and toward silencing those who are fond of reproaching Americans with an indisposition to scientific investigation.

A NEW OPERATION FOR RETROVERSION OF THE UTERUS.

Among those who think it warrantable to resort to a surgical operation for the correction of a retroversion that is not amenable to treatment with pessaries there may be some who are not perfectly satisfied with that of shortening the round ligaments. Such persons will perhaps be interested in a new operation described by Dr. Schücking, of Pyrmont, in a recent issue of the "Centralblatt für Gynäkologie." Essentially, it is an attempt to fix the fundus in the deepest part of the peritoneal depression between the bladder and the uterus. A long sheathed needle, somewhat resembling an aneurysm-needle, with the eye opening at one edge near the point, is passed into the uterine canal and through the fundus, which is then brought down into the situation where it is to be "anchored." Care being taken not to wound the bladder or intéstines, the point of the needle is pushed through into the vagina in front of the cervix. The two ends of the suture are then tied together, and the patient is kept in bed for a few days, after which the suture is removed, and support with a pessary is kept up for a time.

The author gives reports of two cases in which he has resorted to this procedure. The first one ended in failure, in consequence, as Schücking thinks, of his having removed the suture too soon—on the sixth day. In the second case the operation was somewhat modified, the suture being passed through the uterine wall a second time, at a point near the os internum. The patient was allowed to walk about on the tenth day, but the suture was not removed until the fourteenth day. The uterus was then found in a state of sharp anteflexion, and at the end of four months it was still in the same condition of anteflexion and had undergone some reduction in size; it had before been hypertrophied.

We can conceive of such a thinning of the tissue lying between the bladder and the neck of the uterus as to allow of the uterine fundus being bent down and fixed somewhere in the neighborhood of the junction of the anterior vaginal wall with the cervix, but we can not imagine any circumstances under which a woman would be benefited by having that feat performed upon her. Schücking's operation may lead to blessings as yet undreamed of, however, and we should not be surprised to learn of its being resorted to by others. But we can not refrain from giving it as our decided impression that it is not to be recommended.

MINOR PARAGRAPHS.

A NEW MEANS OF DIAGNOSTICATING PENETRATING WOUNDS OF THE INTESTINES.

Dr. Nicholas Senn, of Milwaukee, startled the Surgical Section of the American Medical Association with some experiments intended to show the value of hydrogen in the diagnosis of such wounds. Enemata of the gas were given to dogs for a few minutes, and it was then ignited at the animals' noses; a stab-wound was then inflicted, and it was ignited at the point of puncture. In like manner a pistol-shot wound was diagnosticated. The innocuousness of the gas itself was affirmed and demonstrated. The experiments were looked upon as of the greatest significance, and Dr. Senn was heartily congratulated.

THE ACHIEVEMENTS OF SANITATION IN MASSACHUSETTS.

This subject was prominently considered by Dr. H. P. Walcott, of Boston, in his Address in State Medicine at the meeting of the American Medical Association last week. The vital statistics of Massachusetts, he said, showed a declining death-rate for the last thirty-six years, under the influence of State sanitation. The most marked decrease had been observed in the mortality from zymotic diseases; there had been a less decided reduction of that from constitutional diseases; that from local diseases had increased; and that from mental diseases and from violence had remained stationary. In 1876 there was not a single death from small-pox. Typhoid fever had diminished most in cities having a good system of sewerage and water-supply, and least in towns without such improvements. Diphtheria, which reached its maximum in 1877, had since declined until it now caused only one per cent. of the total mortality. Ovariotomy saved more lives than any other surgical operation, but, taking Somerville as a basis of calculation, the ascertained results of preventive medicine had saved more lives in ten years, among thirty thousand people, than ovariotomy would save in the same time among two millions. Great attention was given to small-pox, which had killed but 5,500 persons in Massachusetts in thirty-six years, and to cholera, which had destroyed only 2,000; but too little heed was given to scarlet fever with its mortality of 37,000 and to typhoid fever with its mortality of 45,000.

THE MODERN INCREASE OF LONGEVITY.

In the course of a very interesting and suggestive annual oration before the Alumni Association of the Medico-chirurgical College of Philadelphia, published in the "Medical Register," the speaker, Surgeon-General Hamilton, of the Marine-Hospital Service, remarked incidentally that the idea of prolonging the lives of a whole nation by proper sanitary regulations was a modern one—a statement, he said, that was not invalidated by the reputed longevity of individuals among the ancients. It was easy to show that the general average duration of life was much greater now than in ancient times. Even in the course of a decade an increase was to be noticed. He had recently examined the mortality statistics of Baltimore and the District of Columbia for the last ten years, and had found that in Baltimore the proportion of deaths of persons over seventy years of age to the whole number of deaths had risen from 0·064 to 10 per cent., and in Washington from 0·10 to 13 per cent.

MEDICINE AMONG THE ARABS.

A writer in the "Progrès médical" gives some interesting facts from an article by Dr. Longo, published in the "Revue de l'Afrique française." It seems that, with the exception of a few men who have been educated in Europe, the Arabs, once famous in medicine, have no practitioners who are acquainted with the science of medicine—only "toubibs," who are generally itinerants, ready to undertake any surgical operation, such as trephining or enucleation of the eye, all the more readily from their very ignorance. It is humorously remarked that they excel in curing those who are destined to get well if let alone.

THE "UNIVERSITY MEDICAL MAGAZINE."

This is the title under which, it is announced, the Faculty of Medicine of the University of Pennsylvania will issue a monthly journal, the first number of which is to appear on the 1st of October. It is to be conducted by an editorial committee consisting of Dr. George E. de Schweinitz and Dr. Hobart A. Hare, with an advisory committee made up of Dr. William Pepper, Dr. D. Hayes Agnew, Dr. William Goodell, Dr. James Tyson, Dr. William Osler, Dr. J. William White, Dr. Samuel D. Risley, Dr. Rush Shippen Huidekoper, and Dr. Horace Jayne. All these gentlemen are connected with the university, and it is to be inferred from the prospectus that the contributed articles will come largely from the members of its medical teaching corps. The new journal is to be published by Dr. A. L. Hummel. It will, of course, have special interest for the graduates of the school that it more particularly represents, but it will undoubtedly be of value to the whole profession.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 15, 1888:

DISEASES.	Week ending May 8.		Week ending May 15.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus fever	1	0	0	0
Typhoid fever	12	1	3	3
Scarlet fever	213	32	186	35
Cerebro-spinal meningitis	5	6	3	3
Measles	134	10	169	11
Diphtheria	186	46	193	52
Small-pox	17	4	20	6

The Massachusetts General Hospital.—Work was begun this week on a new ward to be devoted to abdominal surgery.

Changes of Address.—Since our issue of May 5th the following changes have come to our knowledge: Dr. Robert Campbell, to No. 376 West Thirty-second Street; Dr. J. Herbert Claiborne, to No. 10 East Twenty-eighth Street; Dr. John T. Metcalfe and Dr. Charles S. Ward, to No. 30 West Thirty-third Street; Dr. Ralph L. Parsons, to No. 21 East Forty-fourth Street; Dr. John Ridlon, to No. 337 West Fifty-seventh Street; Dr. Eben S. D. Shaw, to No. 158 Madison Avenue.

A Naval Medical Examining Board is now in session at the Naval Hospital, Philadelphia, for the examination of candidates for admission to the medical corps of the navy. There are eleven vacancies in the list of assistant surgeons. Permits for examination can be obtained on application to the Secretary of the Navy.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 29 to May 12, 1888:*

De Loffre, A. A., Captain and Assistant Surgeon. Granted leave of absence for six months on surgeon's certificate of disability, with permission to go beyond sea. S. O. 99, A. G. O., April 30, 1888.

Edie, Guy L., First Lieutenant and Assistant Surgeon, now under orders to report for duty to the commanding officer, Fort Douglas, Montana Territory, will accompany the 8th Cavalry from Department of Texas to Department of Dakota, and upon completion of this duty will proceed to Fort Douglas. S. O. 99, A. G. O., April 30, 1888.

McCaw, William D., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Leavenworth, Kansas, and ordered for duty at Fort Crawford, Colorado. S. O. 48, Department of the Missouri, May 1, 1888.

Rafferty, Ogden, First Lieutenant and Assistant Surgeon (recently appointed). Ordered for duty at Fort Clark, Texas. S. O. 98, A. G. O., April 28, 1888.

Lauderdale, John V., Captain and Assistant Surgeon. Ordered from Fort Clark, Texas, to Fort Davis, Texas. S. O. 98, A. G. O., April 28, 1888.

McKee, James C., Lieutenant-Colonel and Surgeon. Granted leave of absence for one month. S. O. 107, A. G. O., May 9, 1888.

Greenleaf, Charles R., Major and Surgeon, O'Reilly, Robert M., Major and Surgeon, and Skinner, John O., Captain and Assistant Surgeon. Detailed as members of a board of medical officers, to assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of members of the graduating class and of the candidates for admission to the Academy. S. O. 104, A. G. O., May 5, 1888.

Paragraph 11, S. O. 104, A. G. O., May 5th, is amended by Paragraph 4, S. O. 108, A. G. O., May 10, 1888:

Greenleaf, Charles R., Major and Surgeon, O'Reilly, Robert M., Major and Surgeon, and Skinner, John O., Captain and Assistant Surgeon, are detailed as a board of medical officers, to assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of the candidates for admission to the Academy, and, in connection with the superintendent of the Academy and commandant of cadets, the members of the graduating class.

Brown, Harvey E., Major and Surgeon. The leave of absence for seven days, granted by Orders No. 68, Fort Barrancas, Fla., May 2, 1888, is extended twelve days. S. O. 90, Division of the Atlantic, May 8, 1888.

Loring, Leonard Y., Captain and Assistant Surgeon. Granted leave of absence for three months, on surgeon's certificate of disability. S. O. 105, A. G. O., May 7, 1888.

Brown, Paul R., Captain and Assistant Surgeon. Granted leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Division of the Atlantic. S. O. 107, A. G. O., May 9, 1888.

Benham, Robert B., Captain and Assistant Surgeon. To proceed from Fort Du Chesne to Fort Douglas, Utah, and report to commanding officer of that post, not later than 25th inst., to accompany battalion of 6th Infantry to Fort Lewis, Col.

Upon completion of this duty, will return to his station, Fort Du Chesne, Utah. S. O. 33, Department of the Platte, May 5, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 12, 1888:*

Cabell, A. G., Passed Assistant Surgeon. Detached from the Adams, and to proceed home and wait orders.

Simons, M. H., Surgeon. Detached from the Naval Academy, and ordered to the practice-ship Constellation.

Horwitz, P. J., Medical Director. Granted leave of absence for six months, with permission to leave the United States.

Society Meetings for the Coming Week:

Monday, *May 21st:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *May 22d:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society (private).

Wednesday, *May 23d:* Connecticut Medical Society (New Haven); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *May 24th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *May 25th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *May 26th:* New York Medical and Surgical Society (private).

OBITUARY NOTES.

Howard Pinkney, M. D., one of the surgeons to the New York Eye and Ear Infirmary and a well-known practitioner in New York, died suddenly on Monday, the 14th inst., on a railway train in England. He had sailed from New York on the 5th, on a journey undertaken on account of impaired health, and was on his way from Southampton to London. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1860.

Letters to the Editor.

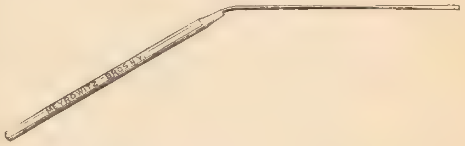
THE USE OF CHROMIC ACID IN THE NASAL CAVITY.

To the Editor of the New York Medical Journal:

Sir: Since the publication of my article in the Journal for March 10th, on "The Use of Caustics in the Nasal Cavity," a number of inquiries have been made as to the particular method employed in the application of the chromic acid. Special stress was laid in my article on the fact that the object of caustics was not to destroy tissue, but rather to control inflammatory action.

The membrane, first, having been thoroughly contracted by the use of cocaine, the superficial layer is coagulated and thus rendered sufficiently dense and inelastic to prevent a return of the blood. With careful use of the caustic, this exsanguinated condition may be maintained for several days.

The method more in detail is as follows: A 20-per-cent. solution of cocaine is first sprayed into the nasal cavity. This solution produces, as a rule, complete expulsion of blood at the end of two minutes and complete anæsthesia at the end of three. This, however, does not occur in all cases, and the tactile sensibility should be tested with a probe and at the same time the condition of the membrane by ocular inspection. If complete exsanguination and anæsthesia do not occur in the time specified, a pledget of cotton, wrapped on a small probe and saturated with the cocaine solution, should be repeatedly swept over the membrane until those conditions have set in. Now the membrane should be wiped perfectly dry with a pledget of fresh cotton on the probe before the application of caustic. Then a very small and slender probe, as shown in the woodcut, reduced one third, is dipped into a little thin mucilage, and subsequently three or four fine acicular crystals are taken up upon it. The mucilage is used in order that the chromic acid may adhere to the probe. The probe holding the crystals should then be held over the flame of a coal-oil lamp or other suitable heating apparatus until the crystals of chromic acid have fused into a small round tear, care being exercised that they be not burned, which on drying presents a minute red bead, as it were of chromic acid, firmly attached to the end of the probe. In this manner the acid can be carried easily to the part which it is desired to cauterize and without danger of burning adjacent tissues.



In making the application, there should always be kept in mind the fact that we do not wish to destroy but simply to create a small inelastic button, as it were, at the summit of the projecting portion of the hypertrophied tissue. We, therefore, as a rule, simply create a small round eschar, perhaps of the size of a split pea.

The speculum being left in the cauterized nostril, the opposite side should now be closed with the finger and the patient directed to take a number of quick inhalations through the nostril which has been treated until the caustic has exhausted itself and been entirely converted into an insoluble oxide of chromium.

In most cases the patient can now be dismissed without further procedure. In many cases, however, it is well to thoroughly wash the part with an alkaline solution and subsequently to throw in a spray of fluid cosmoline.

F. H. Bosworth.

HOUR-GLASS CONTRACTION OF THE UTERUS.

Perth Amboy, N. J., *May 11, 1888.*

To the Editor of the New York Medical Journal:

Sir: As the reply to my letter of the 14th of April, in which I took occasion to review a case of hour-glass contraction, involves a question of facts and personal veracity, I deem it a matter of justice to myself to submit the statements of the writer to the readers of the "New York Medical Journal," that they may examine and ascertain whether I have perverted any facts the doctor presents.

In his communication of the 24th of March he says: "I then made one examination, and found the placenta high up in the vaginal canal." He sends for an anæsthetic and says: "I gave the anæsthetic, introduced my hand into the cavity of the uterus, and found the placenta detached." In my review I stated: "The location of the placenta in the vagina prior to the administration of the anæsthetic and its existence in the uterus afterward, when it was found detached and adhering to the membranes in the upper segment of the womb, I am unable to reconcile." If the placenta *was* "high up" in the vagina, it was as much in that canal as if it had occupied a lower position. *I did not state that the placenta was in the upper segment of the womb*, as may be seen by the foregoing quotation from my reply. When the doctor succeeds in proving to me that he can be in two places at the same time, I shall be able to understand that a placenta can be in the vagina and in the uterus simultaneously. L. S. Blackwell.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of April 11, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Result of an Operation for the Radical Cure of Hernia.—Dr. Markoe presented a patient upon whom he had operated about six weeks previously for the cure of an inguinal hernia by the radical method proposed by Dr. McBurney, with a slight modification which he considered important, as securing a stronger and more resisting cicatrix. In Dr. McBurney's cases, which were presented to the society at the meeting held December 28, 1887, it was noticeable that, owing to the fact that the skin was sutured to the deeper layers of each margin of the wound, there was a groove or depression of the cicatrix which left its solid part thinner than the surrounding abdominal wall. This seemed to Dr. Markoe to be a weak point in the operation, which could be easily remedied. In the first case that presented itself the speaker made an incision from a point over the internal ring well down to the scrotum, and isolated the sac in the usual manner. Then the anterior wall of the inguinal canal was slit up to the internal ring, after Riessel's method, as had been done by Dr. McBurney in his cases, and the hernial sac was tied off as close to the internal ring as possible. In dressing the wound, instead of sewing the cut edges of each flap by sutures passing over the surface of the cut edge, the sutures were passed through the flaps, about half an inch from the edge, penetrating all the layers down to the inguinal canal, and then returned up through the flap to the surface, where they were tied. Three such sutures were placed in each flap, fixing the planes of the parietes in such a way that they were bound to each other, but their free edges were not inverted, as in Dr. McBurney's method. After the flaps were sutured, as above described, a pledget of iodoform gauze was placed in the wound, so as to keep the edges apart and secure granulation from the bottom. The last step consisted in introducing two or three loose stitches from one edge of the wound to the other, to hold the gauze in its position, and to keep the edges from unnecessary gaping. The patient was kept upon his back for four weeks. The wound healed from the bottom by granulation without accident, leaving a scar, which was as thick as the abdominal parietes, and was anchored to the groove formed by the opened inguinal canal. There was no depression of the scar, and the result promised to be perfect.

Dr. McBurney said that the result shown in the case of Dr. Markoe's patient was certainly all that could be desired in any. He thought, however, that the operation described by himself had certain advantages. In the latter operation the sutures were so placed as to bring down the edge of the conjoined tendon, and thus to cause it to be certainly involved in the cicatrix. Secondly, the skin was securely inverted at the edge of the wound, thereby securing patency of the wound for some time, and, consequently, cicatricial healing began at the posterior wall of the canal. The skin, however, did not remain permanently inverted, but gradually yielded as the sutures dissolved, and the granulations grew up.

The Surgical Treatment of Pseudo-membranous Laryngitis.—A paper on this subject was read by Dr. J. D. Rushmore (see page 541).

Dr. Markoe was surprised at the meagre success of the expectant treatment, as shown by the statistics quoted by the reader. In his own experience he could recall at least three cases in which the patient had recovered after tracheotomy had been proposed and declined. He was not an opponent of the operation, however; on the contrary, he believed that it was a useful and valuable adjunct to the medicinal treatment of croup and diphtheria.

Dr. Kammerer said that his experience covered about two hundred and fifty cases. He inclined to Dr. Markoe's opinion, since in a number of cases, in which the symptoms seemed to indicate operative interference, the urgency had disappeared before the preparations for the operation had been completed. He thought that if operative interference was reserved as a last resort, it was very difficult to determine when death would have occurred without it, from asphyxia. Of the whole number of patients operated upon, thirty-three per cent. had recovered; only one child under the age of one year had survived the operation.

Dr. Willy Meyer was very much in favor of tracheotomy. He was of the opinion that more patients who were operated upon for membranous croup would recover if proper care was taken in the after-treatment, with a view to improving both the general condition and the local trouble. So far as his experience went, he could highly recommend instillations into the cannula of warm borosalicylic solution, or solution of salicylic acid alone, as a local antiseptic. Trendelenburg had strongly advised their use several years ago. Five or ten drops were applied at a time with a medicine-dropper, beginning immediately after the introduction of the cannula, and repeating the instillation every ten or fifteen minutes. Aside from their antiseptic action, they irritated the mucous membrane and produced violent coughing, so that mucus and pieces of membrane were expelled. The viscid mucus could not dry so readily at the lower end of the cannula and thus cause a mechanical obstruction. The speaker believed that he was not mistaken in stating that he had seen between twenty-five and thirty of the patients who had been operated upon recover under this method of treatment.

Case of Immediate Strangulated Hernia.—Dr. Wyeth related the history of a case of hernia occurring in a woman, aged forty-two, a multipara of spare build, in good health, who had never had a symptom of hernia. On April 8th, at 8 p. m., while straining at stool, she suddenly felt something give way in the region of the right groin. She immediately felt the tumor that had appeared, and experienced a sharp pain in it. Vomiting began two hours later, and continued at intervals for twelve hours, when it was arrested by a hypodermic injection of morphine. He operated upon her at 4 p. m. on April 9th, and found a loop of small intestine, about two inches in extent, strangulated at the right femoral opening. Although the hernia had just formed, there was no difficulty in recognizing the sac, which was separated from the intestine by about two drachms of serous fluid. The case was reported because it was the first one in the speaker's experience in which strangulation had occurred in an immediate hernia.

Case of Arterio-venous Aneurysm.—The President said that he wished to complete the history of the case of traumatic communication between an artery and vein which he had presented to the society two months ago. It would be remembered that four years and a half before he had tied the common carotid on the proximal side of the point of communication, and that the murmur promptly returned and became quite as marked as before the operation. After presenting the patient to the society, he tied the external and internal carotids. Five days later a faint murmur was again perceptible, plainly due to a recurrent stream through the superior thyreoid, for it could be arrested by pressure over the front of the upper part of the trachea. The murmur increased for a day or two, and then diminished, so as to be barely perceptible when the patient was dismissed, ten days after the operation.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of April 11, 1888.

The President, Dr. J. Solis-Cohen, in the Chair.

(*Continued from page 499.*)

A Case of Hysterectomy.—Dr. W. W. Keen read the following notes of the case, which he owed to the courtesy of Dr. John K. Mitchell, the patient's attending physician:

"Miss X., aged forty-two, American, author. Family history good. Previous personal history good up to about twelve years ago, when she began to suffer in many ways, pointing toward a uterine growth. After two years or more of treatment, Dr. S. Weir Mitchell recommended that the ovaries should be removed. This was done *per vaginam* by Dr. William Goodell in the winter of 1876–'77. The tumor diminished, but she has never been free from pain since, chiefly in the left hypochondrium, but extending both up and down. For between two and three years before I first saw her (January 25, 1887) her general health had been steadily growing worse, and the distress in the side increasing to such a degree that she was utterly unable to work, and was wretched alike in body and mind.

"*Status præsens*, January 25, 1887.—Slight woman, anæmic, not emaciated, complexion pasty. Heart and lungs normal. On examining the abdomen externally a very slight abnormal increase in the uterus upward and to the left was detected. I supposed it the remnant of the old growth, but the patient did not desire a vaginal exploration made, and I was unable to examine it further. There was here no pain or tenderness. An inch below the lowest angle of the ribs on the left side was situated a spot not larger than a quarter of a dollar, tender on pressure, and nearly corresponding in situation with a similar but less defined area of tenderness posteriorly. Most of the distress complained of was vaguely placed hereabouts.

"The kidneys could be clearly outlined by percussion, and showed no change from the normal in their areas. The urine was natural, but sometimes contained a slight excess of uric-acid formations; bowels always slightly sluggish and the appetite poor; no digestive trouble; she slept very ill, being unable to lie on the back or on the left side, as either position increased the pain in the side, and finally caused a suffocating sensation. It is also greatly aggravated by very slight physical exertion, by sitting long in one position, and by constipation. It is now so constant and severe that Miss X. complains of 'losing her grip,' of inability to work to good purpose, and of great irritability.

"*Treatment.*—In spite of the previous ovarian and uterine trouble, the situation of the pain seemed to me to be so far from the former site of the ovaries that I was doubtful of their having any share in the present difficulty, though the thought of a nerve caught in the stump left after their removal occurred to me. My treatment was at first directed to the slight lithæmia. Alkaline waters and a regulated diet did little good, and I returned to the view of the implication of a nerve in the cicatrix, and for some weeks passed a galvanic current through the body, with one pole on the posterior tender spot and the other over the one in front. Miss X. was for two or three months much relieved by this, and grew better when a tonic mixture of iron quinine, and strychnine was given. The treatment was interrupted for a short time by a slight attack of acute articular rheumatism in the left foot and ankle. This yielded readily to salicylates, but returned in a less degree once or twice afterward. For a time cannabis indica tincture at night helped her to sleep, but did no permanent good.

"Throughout a summer in the country her condition varied, but in October she was decidedly worse—more pain, more mental and physical disability, and, finally, repeated violent neuralgic headaches. The fact that there might be a pressure on a nerve, and possibly on the bowel, from the cicatrix of the old wound again occurred to me. There was possibly, also, nephritic trouble suspected. In order to determine the facts, a careful examination under ether was advised."

Early in October, 1887, with the assistance of Dr. J. K. Mitchell, I etherized and examined Miss X. with great care. I found the uterus small, the internal measurements two and a quarter inches; normal position; freely movable; the posterior wall somewhat thickened. On each side of the uterus a distinct tumor was found of about the size of an English walnut. That upon the left side was movable independently of the uterus, and was thought to be the knobbed end of the stump resulting from the previous operation by Dr. Goodell. That upon the right side moved strictly with the uterus and was thought to be a uterine myoma. No other lesion was found in the pelvis. There was nothing detectable in the abdomen in connection with the left kidney, in front of and behind which the chief pain was complained of.

In view of the extremely wretched condition of the patient an exploratory operation was advised.

Operation, November 9, 1887, Dr. J. K. Mitchell and Dr. W. J. Taylor assisting.—An incision was made in the middle line, five inches in length, from the pubes upward. As soon as the peritoneal cavity was opened the uterus came into view and the two tumors above described were immediately recognized. They were so intimately incorporated with the body of the uterus that it seemed hopeless to attempt to remove them separately. In view, also, of the other additional myomata now discovered, and described later with the specimen, it seemed to be the more unwise to leave the uterus in place; accordingly, a Kœberlé *serre-nœud* was applied to the cervix, and the body of the uterus, with its attached tumors, after separation from the peritonæum, was removed by the scissors, the lateral attachments having been first ligated. The peritonæum was now stitched over the stump. Before removing the uterus a careful search had been made in the left hypochondrium, but nothing abnormal was found. The abdominal wound was now closed, first, by a continuous suture to the peritonæum, and next by a row of stitches passing through the rest of the abdominal wall. The clamp was separated from the skin by small pads of sublimate dressing on each side, and a large sublimate dressing and a flannel binder were applied.

Dr. George Dock kindly examined the specimen, and reported as follows: "The specimen consists of the body of the uterus with 3·5 cm. of the right Falloppian tube and corresponding parts of the round and the broad ligaments, and 1 cm. of the left Falloppian tube, the round and the broad ligaments on that side being cut off close to the uterus and the tumors described below. The remains of the ovarian ligaments can not be made out. The fundus is of average size (nullipara), and appears to be cut off just below the internal os. The anterior surface is of normal curve. About the middle of the right border is a subserous fibro-myoma, of the size of a small bean. The posterior surface bulges excessively, the projection being due to the presence of a mural fibroid tumor, which makes up most of the bulk of that part of the organ. The cavity of the uterus (fundus) is flat from before backward, and is triangular in outline, the opening of the tubes being in the two upper angles, the os internum in the lower. The sides of the angles measure: Right, 27 mm.; left, 22 mm.; upper, 25 mm. The right upper angle is at a higher level than the left, the wall of the uterus being relatively thinner on that side. The surface of the cavity is smooth, and presents three small polypoid growths, two on the anterior, one on the posterior surface. The anterior wall is 8 mm. in thickness, the posterior 2 cm.

"The tubes show nothing abnormal. To the right of the fundus in front of its transverse axis, and 1 cm. below the level of the insertion of the round ligament, is a tumor of the size of a walnut (36 x 26 x 26 mm.). It lies in the angle formed by the broad ligament and the uterus, close to the latter, being separated by loose connective tissue and blood-vessels. It is covered by peritonæum, the greater part of which is that forming the anterior fold of the broad ligament.

"The surface of this tumor is irregular. On section it is hard, creaks under the knife; the cut surface is dark-gray in color. Around the periphery are whitish fibrous masses and extreme calcification.

"Microscopic examination of this growth shows it to be a myoma which has undergone partial necrosis, with pigmentation and calcification.

"To the left of the fundus, behind the transverse axis, is another tumor, slightly smaller than the one just described (33 x 26 x 28 mm.). Its upper surface is on a level with the fundus. Its nodular surface is covered with peritonæum, and it is separated from the uterus at a distance of 5 mm. by loose connective tissue in which lie two smaller tumors. On section it shows a lobular structure of firm white tissue (fibro-myoma). In the upper part are masses of hard, calcareous matter (calcium carbonate). The two smaller tumors in the connective tissue are myomata."

For the next three days the patient complained greatly of pain, which was relieved by considerable doses of morphine. It should, however, here be stated that she bore pain badly. Her highest temperature was 99·7° F., and the normal was reached at the end of the third day. At this time, of her own accord, she declined any further morphine. The catheter had to be used for the first three days. With the exception of a rather obstinate constipation, which caused considerable abdominal pain and sleeplessness, which last was relieved by cannabis indica, her later history was uneventful, saving in one particular. The wire was tightened to the utmost limit in the course of the week after the operation, but the stump did not slough nor did the clamp become loose. As the clamp was producing ulceration of the skin, it was removed December 2d. The wound at this time was reduced to a tubular sinus leading down to the stump. The last slough from the stump did not come away until December 26th, and the wound was completely healed January 6, 1888.

Since that date the patient has been absolutely well, physically and mentally. She eats and sleeps well, and takes active exercise with more satisfaction than at any time during the last twelve years; in fact, she is thoroughly restored to good health.

To complete her history, I will add the examination of her eyes by Dr. De Schweinitz: "Oval discs; rather too gray; retinal haze, both venous and arterial; lymph sheaths distended. This low grade of retinal disturbance is, I think, purely accommodative. There is a high degree of insufficiency of the internal recti." He prescribed the proper glasses.

The removal of the ovaries by Dr. Goodell, which was done *per vaginam*, was one of the earliest of such operations done in this country. It reflects no little credit upon his skill, that in so contracted a vagina he was able so successfully to remove the ovaries. Although this operation relieved her temporarily from pain, it proved of no permanent benefit. Her pains returned, and, though located differently, grew worse and worse, so that, finally, all mental exertion, and all physical exertion as well, became greatly hampered. In fact, writing, which was her vocation, became impossible. She was willing to undergo any operation whatsoever which held out any chance of relief. She preferred to die rather than to live in such wretchedness. The diagnosis was very obscure. What the meaning of the pain in the hypochondrium was, I could only surmise. The two tumors on each side of the uterus were believed to be, one a uterine myoma, and the other an enlargement on the stump following Dr. Goodell's operation. An examination of the specimen shows, as to the first, that I was right. But no enlargement had taken place on the pedicle on the left side, the tumor being one of a number of myomata developed in connection with the uterus. Its situation at the cornu uteri very naturally misled me. No other operation than hysterectomy would, I think, have been advisable. Its performance was easy, and its results have been perfect. Why the removal of the uterus, with its attached myomata, should get rid of pain in the hypochondrium I am unable to say. To say that it was reflex pain is simply to express our ignorance in different words. Certain it is, however, that the removal of the entire internal organs of generation has been followed with the happiest results, whereas the removal of the ovaries alone gave but little relief. I have deemed it important to report the case in consequence of the recent question as to the results of complete and incomplete removal of the tubes with the possibility of the development of tumors on the stumps after incomplete removal of the tubes. My first impression upon examining the specimen itself was that the two tumors were such knobby stumps, but, after section and microscopic examination by Dr. Dock, this impression was seen to be erroneous.

Book Notices.

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F. R. C. S., Consulting Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, etc. With Ninety-six Illustrations. Third Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xv–240. [Price, $2.]

The first edition of this little manual was published in 1884. The present edition is somewhat enlarged, and numerous additions have been made to almost every chapter. Chapter III, on the methods of determining refraction, has been largely rewritten and is much improved. Chapter IV, on the ophthalmoscope, is nearly new. Chapter V devotes thirty-three pages to the subject of retinoscopy; and from the standpoint of American ophthalmologists this is altogether out of proportion to the real value of this method of investigation. Chapter X, on strabismus, has received many additions, which render the book more valuable to the student. The book contains a series of test-types for reading, some large letters for the testing of distant vision, and Pray's test-types for astigmatism. There is also a very full index, and some new woodcuts have been added, all of which tend to make this little volume still more acceptable to the student.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

Asselin & Houzeau, Paris.—A. Blum, "Chirurgie du pied." (*8fr.*) —— Lannelongue, "Tuberculose vertébrale." Ed. by V. Ménard. (*12fr.*)

J. B. Baillière & fils, Paris.—E. Périer, "La seconde enfance." (*2fr.*) —— A. Cullere, "Les frontières de la folie." (*3fr.* 50.) —— Chaleix-Vivie, "Des névralgies vésicales." (*2fr.* 50.)

Bureaux du "Progrès médical," Paris.—P. Raymond, "Des éphidroses de la face." (*2fr.*)

A. Delahaye & E. Lecrosnier, Paris.—Rendon, "Fièvres de surmenage." (*3fr.* 50.) —— Garrigou-Désarènes, "Du catarrhe chronique hypertrophique et atrophique des fosses nasales, de l'ozène, obstruction catarrhale des trompes d'Eustache," etc. (*5fr.*) —— Baudry, "Éléments de pathologie chirurgicale générale." 2d part. (*7fr.*) —— Dreyfous, "De l'hystérie alcoolique." (*1fr.* 50.) —— P. Gaudin, "Sur la pathogénie des accidents nerveux consécutifs aux explosions du grisou." (*2fr.*)

O. Doin, Paris.—Debière, "Les maladies infectieuses; microbes, ptomaïnes et leucomaïnes." (*3fr.* 50.) —— Bérenger-Féraud, "Leçons cliniques sur les tænias de l'homme." (*8fr.*)

G. Masson, Paris.—Poincaré, "Recherches expérimentales sur l'action toxique des conserves."

W. Braumüller, Vienna.—J. Neudörfer, "Gegenwart u. Zukunft d. Antiseptik u. ihr Verhältniss zur Bakteriologie." (*1M.*)

Breitkopf & Härtel, Leipsic.—H. Fehling, "Stand d. Leitung d. physiolog. u. patholog. Nachgeburtszeit." (*0M.* 75.) —— Jaffe, "Ueber Hyperemesis gravidarum." (*0M.* 75.) —— K. Partsch, "Die Actinomykose des Menschen." (*1M.* 50.)

H. Costenoble, Jena.—Mantegazza, "Anthropologisch-kulturhistorische Studien über die Geschlechtsverhältnisse." 2d ed. (*7M.*)

Franz Deuticke, Vienna.—E. Finger, "Die Syphilis u. die venerischen Krankheiten." 2d ed. (*6M.*) —— E. Finger, "Die Blennorrhöe d. Sexualorgane u. ihre Complicationen." (*9M.*) —— J. Gottstein, "Die im Zusammenhange mit den organischen Erkrankungen des Centralnervensystems stehenden Kehlkopfaffektionen." (*1M.*) —— J. Gottstein, "Die Krankheiten des Kehlkopfes." 2d ed. (*7M.*) —— A. Schreiber, "Allgemeine u. specielle orthopädische Chirurgie." (*10M.*)

Ferdinand Enke, Stuttgart.—C. J. Eberth and C. Schimmelbusch, "Die Thrombose nach Versuchen u. Leichenbefunden." (*7M.*) —— G. Leopold, L. Korn, H. Löhmann, and J. Präger, "Der Kaiserschnitt u. seine Stellung zur künstlichen Frühgeburt, Wendung u. Perforation bei engem Becken." (*7M.*) —— W. T. v. Renz, "Die Eigenart der Warmquellen von Wildbad u. deren richtiger Kurgebrauch." (*3M.* 60.) —— Riedinger, "Verletzungen u. chirurg. Krankheiten des Thorax u. seines Inhalts." Part 42 of "Deutsche Chirurgie." (*10M.*) —— Seiffart, "Die Massage in der Gynäkologie." (*1M.* 60.) —— F. Seitz, "Der Abdominaltyphus." (*6M.*) —— R. Kobert, "Arbeiten des pharmakolog. Instituts zu Dorpat." i. (*5M.*) E. H. Kisch, "Die Fettleibigkeit." (*10M.*)

J. A. Finsterlin, Munich.—C. Kraus, "Die Irrenbehandlung u. Irrenpflege vor 50 Jahren in Bayern u. deren Fortschritte in d. Gegenwart." (*2M.*)

Gustav Fischer, Jena.—G. Baur, "Beiträge zur Morphogenie des Carpus u. Tarsus d. Vertebraten." i, "*Batrachia.*" (*3M.* 50.) —— T. Boveri, "Zellenstudien." i, "Die Bildung d. Richtungskörper bei *Ascaris megalocephala* u. *Ascaris lumbricoides.*" (*4M.* 50.) —— A. Hückel, "Die Rolle d. Suggestion bei gewissen Erscheinungen d. Hysterie u. des Hypnotismus." (*1M.* 80.)

G. Freytag, Leipsic.—J. Janosik, "Zur Histologie des Ovarium." (*0M.* 80.)

Carl Gerold's Sohn, Vienna.—J. Gruber, "Lehrb. d. Ohrenheilkunde." 2d ed. (*24M.*)

T. Grieben, Leipsic.—C. Griebel, "Die Nervenkrankheiten." 4th ed. (*1M.* 20.) —— C. Griebel, "Die menschliche Stimme, ihre Pflege in gesunden u. kranken Tagen." (*1M.* 25.)

Heuser, Neuwied.—Galippe, "Die infektiöse arthro-dentäre Gingivitis (Pyorrhœa alveolaris)." Transl. by B. Manassewitsch. (*1M.*) —— E. Günther, "Praktische Anleitung zur vollständigen Heilung des Stotterns." 2d ed. (*2M.*) —— J. G. Sallis, "Der Hypnotismus in d. Geburtshülfe." (*0M.* 75.)

A. Hirschwald, Berlin.—A. Heimann, "Ueber Paralysis agitans." (*2M.* 40.) —— Orth, "Compendium d. patholog.-anatom. Diagnostik." 4th ed. (*14M.*)

Lipsius & Tischer, Kiel.—C. Barckmann, "Ueber Xeroderma pigmentosum." (*1M.*) —— H. Collischonn, "Beitrag zur Kasuistik der Form- u. Lagerungstörungen des Magens." (*1M.* 50.) —— G. Kalmus, "Beitrag zur Statistik u. path. Anatomie d. sekundären Magendiphtheritis." (*1M.*) —— C. Schröder, "Ueber die Wirkung d. Ueberosminsäure bei Epilepsie." (*1M.*) —— M. Friedrich, "Ueber metastatische proliferirende Papillome d. Aortenwand bei primärem proliferirenden papillären Kystom des Ovarium." (*1M.*) —— J. Herting, "Ueber Achsendrehung des Darms bei Neugeborenen." (*1M.*) —— C. Schmid-Monnard, "Ueber Pathologie u. Prognose d. Gelenktuberkulose, insbesondere des Fusses." (*2M.*)

F. Lucas, Mitau.—S. Kröger, "Wirkung u. Anwendung d. verschiedenen Badeformen in Gesundheit u. Krankheit." (*1M.* 50.)

Stahel, Würzburg.—A. Hoffa, "Lehrbuch d. Frakturen u. Luxationen." ii. (*8M.*)

F. W. Steffens, Leipsic.—C. Mantegazza, "Das nervöse Jahrhundert." (*2M.*)

F. C. W. Vogel, Leipsic.—B. Schmidt, "Arbeiten aus d. chirurg. Universitätspoliklinik zu Leipzig." i. (*4M.*)

Leopold Voss, Hamburg.—F. Brosin, "Ueber die schwarze Haarzunge." (*1M.* 20.)

Urban & Schwarzenberg, Vienna.—M. Benedikt, "Kraniometrie u. Kephalometrie." (*5M.*) —— A. Bum, "Die Massage in der Neuropathologie." (*0M.* 75.) —— W. F. Löbisch, "Die neueren Arzneimittel." 3d ed. (*8M.*) —— G. Diamantopulos, "Typhus icterodes von Smyrna." (*3M.*) —— F. Minnich, "Croup u. seine Stellung zur Diphtherie." (*1M.* 50.)

Vandenhoeck & Rupprecht, Göttingen.—O. Bense, "Beiträge zur Statistik der Trommelfellperforationen bei Otitis media suppurativa." (*0M.* 60.) —— E. Clebsch, "Ueber Herzerkrankungen bei Diphtherie." (*0M.* 60.) —— C. Varenhorst, "Beiträge zur Lehre von den Fremdkörpern des Ohres." (*1M.* 20.)

A. Cammeyer, Christiania.—K. Heiberg, "Orienterende Oversigt over Laeren om de pathogene Bakterier hos Mennesket." (*1Kr.* 25.)

Fratelli Rechiedei, Milan.—G. Fiorani, "Le malattie della vescica e della prostata." (*4l.*) —— R. Cantalupo, "Compendio di patologia chirurgica topografica." 3 vols. (*14l.*)

Imprenta del Estado, Lima.—D. A. Carrion, "La Verruga Peruana."

BOOKS AND PAMPHLETS RECEIVED.

Abdominal Surgery. By J. Greig Smith, M. A., F. R. S. E., Surgeon to the Bristol Royal Infirmary, etc. Second Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi–776. [Price, $7.]

Inebriety: its Ætiology, Pathology, Treatment, and Jurisprudence. By Norman Kerr, M. D., F. L. S., Fellow of the Medical Society of London, etc. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xxx–415. [Price, $3.]

Theine in the Treatment of Neuralgia. Being a Physiological Contribution to the Therapeutics of Pain. By Thomas J. Mays, M. D., Professor of Diseases of the Chest in the Philadelphia Polyclinic, etc. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vii–9 to 84. [Price, 50 cents.]

The Language of Medicine. A Manual giving the Origin, Etymology, Pronunciation, and Meaning of the Technical Terms found in Medical Literature. By F. R. Campbell, A. M., M. D., Professor of Materia Medica and Therapeutics, Medical Department of Niagara University. New York: D. Appleton & Company, 1888. Pp. viii–318. [Price, $3.]

The Modern Treatment of Pleurisy and Pneumonia. By G. M. Garland, M. D. Detroit: George S. Davis, 1888. Pp. 108. [The Physician's Leisure Library.]

Clinical Notes on Pruritus. By L. Duncan Bulkley, A. M., M. D., etc. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Lesions of the Vagina and Pelvic Floor, with special Reference to Uterine and Vaginal Prolapse. By B. E. Hadra, M. D., Austin, Texas. With 83 Illustrations. Philadelphia: Records, McMullin, & Co., 1888. Pp. 9 to 329.

Studies in Pathological Anatomy, especially in Relation to Laryngeal Neoplasms. 1. Papilloma. By R. Norris Wolfenden, M. D. Cantab., and Sidney Martin, M. D. Lond., etc. London: J. & A. Churchill, 1888.

Should Physicians be Pharmacists? By Charles L. Mitchell, M. D. [Reprinted from the "Philadelphia Medical Times."]

Photographic Illustrations of Skin Diseases. An Atlas and Textbook combined. By George Henry Fox, A. M., M. D., etc. Hand-colored Plates. Part V—Nearly One Hundred Cases from Life. Part VI—Nearly One Hundred Cases from Life. Second Series, complete in Twelve Parts. New York: E. B. Treat, 1888.

The Movements of the Ankle Joint. By W. Arbuthnot Lane, M. S., F. R. C. S., etc. [Reprinted from the "Journal of Anatomy and Physiology."]

Infant Feeding, especially with Reference to Subjects with Infantile Eczema. By L. Duncan Bulkley, A. M., M. D., etc. [Reprinted from the "Journal of the American Medical Association."]

A Guide to the Practical Examination of Urine. For the Use of Physicians and Students. By James Tyson, M. D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania, etc. Sixth Edition. Revised and corrected. With a Colored Plate and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–13 to 253. [Price, $1.50.]

Miscellany.

The New York Academy of Medicine.—The Section in Ophthalmology and Otology will meet on Monday evening, the 21st inst. The programme includes: "Four Cases of Acute Inflammation of the Middle Ear from the Abuse of Roosa's Bulb Nasal Inhaler" and "The Disastrous Results of a New Artificial Drum Membrane," by Dr. Frank W. Ring; and "A Case of Metastatic Carcinoma of the Chorioid," by Dr. A. Schapringer.

The Section in Laryngology and Rhinology will meet on Tuesday evening, the 22d inst. Members are expected to give brief answers to the following questions: "What are the various Causes of so-called Catarrh of the Upper Air-passages?" and "Is Follicular Tonsilitis Contagious?" Dr. Charles H. Knight will read a paper on "Malignant Disease of the Larynx."

The Section in Pædiatrics will meet on Wednesday evening, the 23d inst. The programme includes: "Experimental Studies on some Points concerning the Causation and Treatment of the Summer Diarrhœa of Infants," by Dr. V. C. Vaughan, of Ann Arbor, Michigan; "A Study of the Micro-organisms in the Stomach and Intestines in the Summer Diarrhœa of Infants," by Dr. W. D. Booker, of Baltimore; "Microscopic Examination of the Stomach and Intestines in the Summer Diarrhœa of Infants," by Dr. L. Emmett Holt; and "The Anatomical Characters of Summer Diarrhœa in Infants," by Dr. J. Lewis Smith and Dr. W. P. Northrup.

The Section in Obstetrics and Gynæcology will meet on Thursday evening, the 24th inst. Dr. H. T. Hanks will demonstrate Mr. Tait's method of "Flap-splitting" and read "A Plea for the Primary Operation on the Perinæum"; and Dr. A. H. Buckmaster will report "A Case of Extra-uterine Pregnancy—Destruction of the Fœtus by the Galvanic Current without Interruptions."

The Section in Materia Medica and Therapeutics will meet on Friday evening, the 25th inst. Dr. D. M. Cammann will read a paper on "Terpin in Diseases of the Lungs."

The New York State Medical Association.—The Fifth District Branch will hold its fourth annual meeting in the Magnolia Lodge Rooms, No. 177 Montague Street, Brooklyn, on Tuesday, the 22d inst. There will be an annual address by the president, Dr. Edwin Barnes; Dr. T. H. Allen will read a paper on "Some Causes of Failure in the Operation of Trachelorrhaphy"; Dr. J. Lewis Smith will read a paper on "Diphtheria of the New-born and Sepsis of the New-born as observed in the New York Infant Asylum and the New York Foundling Asylum"; and a discussion on "Surgical Aid in the Treatment of Pulmonary Disease" will be opened by Dr. N. L. North, who will be followed by Dr. J. D. Bryant, Dr. C. A. Leale, Dr. Avery Segur, and Dr. C. S. Wood.

The New York Pathological Society.—At the next meeting, to be held on the 23d inst., at the College of Physicians and Surgeons, Dr. Delafield will show specimens of acute Bright's disease, with lantern demonstrations. We are asked to state that the society's meetings, which are held on the second and fourth Wednesday evenings of each month, are open to the profession.

The German Society of Gynæcology will hold its second meeting in Halle, on the 24th, 25th, and 26th inst. The programme includes the following titles: "On the Interchange of Matter between Mother and Fœtus," by Dr. Dührssen, of Berlin; "On the Promotion of Delivery in Cases of After-coming Head," by Dr. Winckel, of Munich; "The Treatment of the Placental Stage of Labor," by Dr. Dohrn, of Königsberg; "On the Treatment of Extra-uterine Gestation," "On Atony of the Non-puerperal Uterus," and a "Demonstration of Preparations," by Dr. Schwarz, of Halle a. S.; "On the Occurrence of Psychoses in Consequence of Operations on the Genital Apparatus in Women," "On Laparotomy with the Pelvis elevated" [*bei hochliegendem Becken*], and "On the Use of Buried Sutures in Plastic Operations on the Perinæum and Vagina," by Dr. Werth, of Kiel; "On the Ætiology of Vulvo-vaginal Inflammation in Childhood," by Dr. Pott, of Halle a. S.; "On the Internal Relapse of Erysipelas after Months of Latency in Consequence of Premature Labor," by Dr. Döderlein, of Leipsic; a paper on a subject not yet announced, by Dr. Zweifel, of Leipsic; "On Congenital and Acquired Anomalies of the Tubes," by Dr. Freund, of Strassburg; "On Injury of the Bladder in Laparotomies," "On Leucæmia in Pregnant Women," and a "Demonstration of Patients operated on by Flap Perinæorrhaphy and by Ventrofixation for Retroflexion of the Uterus," by Dr. Sänger, of Leipsic; a "Short Contribution on Pessaries," by Dr. Schultze, of Jena; "Therapeutical Contributions on Ischuria Puerperarum, on Pains during Pregnancy, and on Turning and Extraction in Cases of Contracted Pelvis," "On Placenta Circumvallata," and "On the Puerperal Mortality in the Grand Duchy of Mecklenburg-Schwerin," by Dr. Schatz, of Rostock; "On the Operative Treatment of Parametritic Abscesses" and "On the Operative Treatment of Cancer of the Cervix Uteri," by Dr. Baumgärtner, of Baden-Baden; "On Placenta Prævia, illustrated by a Section of a Uterus in an Advanced Period of Gestation," "On Intra-uterine Fœtal Movements not before described," and on "Professional or Occasional Midwives," by Dr. Ahlfeld, of Marburg; "On the Treatment of Rupture of the Uterus," by Dr. Leopold, of Dresden; "Experiences with the Axis-traction Forceps," by Dr. Bumm, of Würzburg; "The Treatment of Retroflexion of the Uterus," by Dr. Skutsch, of Jena; "On the Opening of Abdominal Cystic Tumors on Two Separate Occasions," by Dr. Keil, of Halle a. S.; and "On Plastic Operations" and "On Myomotomy," by Dr. Fritsch, of Breslau.

Antiseptic Vaccination.—Under the heading of "An Important Step in Vaccination," the "Medical and Surgical Reporter" says: "In these days of antiseptic surgery, when it is believed that the most serious consequences may follow the introduction into the human system of germs which are constantly present in the air and on the surface of the body, it is a somewhat singular spectacle to see men who are full believers in the germ theory habitually doing a thing which, according to this theory, must be exceedingly dangerous. We refer to the practice of vaccination as it is ordinarily carried out. In this procedure a portion of the skin is scratched until the corium is reached, and then a portion of vaccine virus is thoroughly rubbed into it with the aid of sufficient moisture. It is the misfortune of physicians and patients that there is no practicable way of securing supplies of vaccine virus which will insure its entire freedom from the germs of erysipelas or some other disease; and, no matter how careful and conscientious the vaccinator may be, he may inoculate his patient with something very different from what he intended. But there is another source of danger to the patient which does not depend upon the nature of the virus used, and which may have its share in producing the violent inflamed sores and profound constitutional disturbance which too often follows vaccination. This source of danger lies on the skin of the patient, in the shape of dead epithelium, which may have undergone some decomposition from the action of the perspiration, or of morbific organisms which have been deposited in it. We believe this source of danger in vaccination has not received the attention it deserves, and that it would be profitable for some investigator to try to learn what proportion of bad arms are the consequence of the failure of physicians to render aseptic that portion of the skin of their patients which they select as the place for vaccination. Meanwhile we would urge upon our readers the desirability of making it an invariable rule to thoroughly cleanse the site of vaccination with water and soap —and perhaps some antiseptic—and brisk rubbing; so that, if a bad arm follows, they may feel that they have not neglected so simple a step, which is suggested by common sense and made almost imperative by the accepted tenets of general surgery. To vaccinate an unwashed arm ought, we believe, to be regarded as an error in practice."

A Portrait of the late Dr. James L. Little has been placed in the reading-room of the New York Post-graduate Medical School and Hospital.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending May 11th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending April 21st corresponded to an annual rate of 19·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton and Derby, viz., 15·7, and the highest in Plymouth, viz., 29·6 in a thousand. Small-pox caused 12 deaths in Sheffield, 3 in Hull, 1 in Bristol, 1 in Manchester, and 2 in Oldham.

London.—One thousand five hundred and fifty-two deaths were registered during the week, including measles, 18; scarlet fever, 21; diphtheria, 10; whooping-cough, 92; enteric fever, 13; diarrhœa and dysentery, 23. The deaths from all causes corresponded to an annual rate of 18·9 in a thousand. Diseases of the respiratory organs caused 363 deaths; different forms of violence, 48; and 12 suicides were registered. In greater London 1,954 deaths were registered, corresponding to an annual rate of 18·4 in a thousand of the population. In the "outer ring" 30 deaths from whooping-cough; scarlet fever, 5; and diphtheria, 5, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending April 21st in the sixteen principal town districts of Ireland was 26·1 in a thousand of the population. The lowest rate was recorded in Dundalk, viz., 8·7, and the highest in Lisburn, viz., 53·2 in a thousand. In Dublin 168 deaths were registered, including 5 from whooping-cough; scarlet fever, 3; typhus, 1; diphtheria, 1; enteric fever, 1; and diarrhœa, 1.

Scotland.—The deaths registered in eight principal towns during the week ending April 21st corresponded to an annual rate of 21·2 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 14·9, and the highest in Paisley, viz., 25·5 in a thousand. The aggregate number of deaths registered from all causes was 535, including 9 from measles; scarlet fever, 4; diphtheria, 11; whooping-cough, 17; fever, 10; and diarrhœa, 11.

Callao.—The United States consul, in his dispatch under date of April 3, 1888, states that "the last report from the Peruvian medical representative in Chili regarding the progress of the cholera in that republic is dated the 23d of March last, and is as follows: 'Santiago.—No new cases; deaths, 2; 17 sick in hospital. Another lazaretto closed. Valparaiso.—Seven new cases; 1 death; in hospital, 34. Ovalle, Viculla, few cases. At Serena it has disappeared. Lazaretto at Concepcion closed. Declining at Lota and Coronel.' This information is the most reassuring that we have received. The public health at Lima and this port continues to be satisfactory, but interdiction of vessels from Chili is still maintained.

"April 13, 1888.—The latest cable reports regarding cholera in Chili from the medical representative of this government are very satisfactory. Under date of the 11th instant he states that 'at Valparaiso the disease is officially declared to have disappeared'; at Santiago 'only 2 patients in hospital, and the last lazaretto was to be closed on the 11th; at Copiapo, 8 cases.' The authorities here will doubtless follow the precedent established last year and lift the interdiction of vessels from Valparaiso after sixty days have elapsed from the date of the official declaration mentioned."

Dunfermline, Scotland.—The United States consul, in his dispatch dated April 16, 1888, states that "several cases of small-pox are reported from Inverkeithing, a village of about fifteen hundred inhabitants, and distant about three miles from Dunfermline. It is believed that the disease was brought to this district by a railway laborer from Leeds or Sheffield, in both of which towns small-pox is said to be alarmingly epidemic. . . . The last case reported is that of a girl who is a member of a large family, and who continues to reside at home. The law does not provide for the removal of such a patient from home without the patient's consent."

Copenhagen.—The United States consul, in his dispatch dated April 21, 1888, transmits copies of notices issued by the Danish Government respecting regulations in second part of the law with reference to the importation into the country of epidemic diseases, dated July 2, 1880, which are in force until further notice with respect to vessels arriving from ports on the French coast between Nantes and St. Malo, etc.

"According to reports, a small-pox epidemic has broken out in Bretagne, and therefore the aforesaid regulations were at once enforced for vessels arriving from and having been in contact with the above-mentioned ports. It is prohibited to import used linen, wearing apparel, and bed-clothing, if such do not belong to persons' traveling effects, rags, used wadding, carding-wool, paper-shavings, hair, and hides. Quarantine is hereafter ordered for Italian ports on the Adriatic coast between Ortona and Bari, both included. The before-mentioned regulations are hereafter in force from the following places: Ports on the French coast between Nantes and St. Malo, both included. Ports on the Swedish coast between Malmo and Landskrona. All ports in Chili. All ports in Florida. All ports at Jamaica. All ports at Martinique. All ports at Guadeloupe, St. Jago di Cuba. All ports in East India, Tonkin, and Cochin China. Trieste. All ports in Egypt. Ports on the Red Sea. Rio de Janeiro and Havana. Prohibition against the importation of used linen, wearing apparel, and used bed-clothes, if such do not belong to passengers' traveling effects, rags, used wadding, carding-wool, paper-shavings, hair, and hides, from the following places: Ports on the French coast between Nantes and St. Malo, both included. Ports on the Swedish coast between Malmo and Landskrona. Ports at the Adriatic coast between Ortona and Bari, both included. All ports in Florida. All ports at Jamaica. All ports at Martinique. All ports at Guadeloupe, St. Jago di Cuba. All ports in East India, Tonkin, and Cochin China, and all ports in Chili. The prohibition of importation into the country of used linen, wearing apparel, and used bed-clothes, if such do not belong to persons' traveling effects, is in force with regard to Rio de Janeiro and Havana. Besides, it is particularly ordered and under the control of the authorities that linen, wearing apparel, and bed-clothes which may be brought from the two before-mentioned places shall be cleansed. This order will be enforced at once. Published for the information and observance of all whom it may concern."

Havana.—The sanitary inspector reports for the month of April 474 deaths, including yellow fever, 24; small-pox, 55; enteric fever, 9; so-called pernicious fever, 6; diphtheria, 10; croup, 2.

The following telegram has also been received:

"HAVANA, *May 9, 1888.*

"British steam-yacht Lancashire Witch sailed 6th with several cases suspicious diarrhœa. Destination, Charleston or New York, probably."

The health officers at Charleston and New York were immediately notified by this Bureau.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM— Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	April 21.	2,260,945	1,115	..	....	8	....	10	5	35
Glasgow	April 21.	545,678	228	..	....	....	....	4	1	8
Warsaw	April 14.	439,174	194	..	....	2	....	....	2	4
Calcutta	March 24.	433,219	242	70	....	..	....	....	....	....
Copenhagen	April 16.	300,000	130	..	....	....	....	....	5	7
Palermo	April 22.	250,000	110	..	....	....	1	2	1	5
Genoa	April 21.	179,464	85	..	....	....	2	....	1	1
Leipsic	April 21.	170,000	73	..	....	...	....	....	1	5
Trieste	April 14.	154,500	93	..	....	1	....	....	....	....
Toronto	April 28.	130,000	41	..	....	....	....	1	....	....
Stuttgart	April 21.	125,510	46	..	....	....	....	....	....	....
Bremen	April 19.	122,000	42	.	....	....	....	....	1	....
Havre	April 21.	112,074	65	..	....	5	....	2	....	....
Barmen	April 21.	109,000	31	..	....	....	....	....	....	...
Leghorn	April 22.	101,718	42	..	....	....	....	....	....	....
Cadiz	April 21.	65,028	35	..	....	....	....	....	....	....
Callao	April 14.	34,000	......	..	....	....	....	....	....	....
Curaçoa	April 14.	25,000	......	..	....	....	....	....	....	....
Sagua la Grande.	April 14.	15,605	8	..	....	1	....	....	....	....
Sagua la Grande.	April 21.	15,605	17	..	....	1	....	1	....	....
Cartagena, Cola.	April 14.	13,000	10	..	....	....	...	....	....	....
Matamoras	April 14.	12,000	5	..	....	....	....	....	....	....
Nassau	April 21.	12,000	......	..	....	....	....	....	....	....
Laguayra	April 14.	7,428	5	..	....	....	....	....	....	....
Paita, Peru	April 14.	4,000	......	..	...	....	....	....	....	....

Key West.—The medical officer in charge of the Marine-Hospital Service reported, under date of the 4th instant, that "the steamship Alamo, from Galveston for New York, has just arrived with a case of small-pox in one of the crew. I understand the man has been isolated, and will be sent to the city hospital, and the vessel cleansed and allowed to proceed."

THERAPEUTICAL NOTES.

Salicylic Acid in Ringworm.—Dr. N. F. Penn, of Lexington, Kentucky, writes to us that salicylic acid, in the form of an ointment or, still better, dissolved in collodion, is almost a "sure cure" for ringworm of the face, neck, etc. He paints the affected spot with a saturated solution once a day, if necessary, but says that one application will generally effect a cure. It causes some pain, but only for a short time. So far as Dr. Penn knows, the method originated with his brother, Dr. W. W. Penn, of Texas. He has seen it fail in only one case—one of several years' standing—and in that instance it stopped the affection for the time being, but it would return very soon.

Lipanin as a Substitute for Cod-liver Oil.—According to von Mering ("Therap. Monatsh.," 1888, No. 2; "Ctrlbl. f. d. ges. Therap.," April, 1888), lipanin is a partially saponified olive-oil containing six per cent. of free oleic acid, of an agreeable taste, easily emulsified, and readily absorbed. On the theory that cod-liver oil owes its efficiency to the presence of free fatty acids, lipanin may be regarded as a substitute for that agent. The author has given it for months together to adults, from two to six tablespoonfuls daily, and for from six to twelve weeks to children, from a teaspoonful to four teaspoonfuls daily, with good results.

Atropine in Poisoning with Pilocarpine.—The "Lancet" gives an abstract of an account, published by Dr. Wicherkiewicz in a Polish medical journal, of a case in which eight minims of a two-per-cent. solution of pilocarpine had been injected under the skin of the temporal region for an ophthalmic affection. This was followed by very severe symptoms of poisoning and collapse. A subcutaneous injection of morphine and the inhalation of amyl nitrite having proved useless, two drops of a one-per-cent. solution of atropine were given subcutaneously. This proved more effective, and the patient recovered.

ANSWERS TO CORRESPONDENTS.

No. 184.—The formula of Dendy's lotion for pruritus is as follows:

Diluted hydrocyanic acid	1 fluidrachm;
Corrosive chloride of mercury	1 grain;
Almond mixture	to 6 fluidounces.

No. 185.—(1.) There is no definite rule as to the size of the opening made by a bullet entering the skull and the range. (2.) At the distance you mention, powder-marks would probably be discernible. (3.) "Instantaneous death" we take to mean death supervening on the injury or other lesion that causes it, without an appreciable interval. Death from an injury of the head is very rarely instantaneous, unless the *nœud vital* is involved. (4.) You do not state the point of emergence; consequently no estimate can be given.

No. 186.—The salt operates by raising the specific gravity of the liquid. Sugar will answer quite as well.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ON FRACTURES OF THE HEAD OF THE FIBULA FROM MUSCULAR CONTRACTION,

AND IMPLICATING THE EXTERNAL POPLITEAL NERVE.*

By ROBERT F. WEIR, M. D.,
SURGEON TO THE NEW YORK HOSPITAL, ETC.

I venture to bring to the notice of the society to-night a form of fracture which investigation has shown to be quite uncommon.

On the 6th of last May I was requested by Dr. C. C. Lee, of this city, to see a young gentleman, aged twenty-one, who had fallen the night previously while wrestling with a companion. His left leg, he stated, was twisted around that of his antagonist. As he fell he felt something give way and found that he was unable to walk. His leg was carried decidedly to the inside of the thigh, so that the entire limb was bowed outward. He obtained relief from his pain by his friend pulling forcibly upon the foot, whereupon the knee straightened itself. The accident had occurred about twelve hours prior to my seeing him, and as at this time the knee joint was greatly swollen and very painful, particularly over its outer aspect, where a good deal of ecchymosis was visible, ether was administered for a proper examination of the parts. The joint, as previously stated, was greatly distended with blood, but no fracture of the femur nor of the tibia was made out. Just above the joint, however, on the outer aspect of the external hamstring tendon, was felt a hard mass of the size of the end of the thumb, movable in several directions and apparently bony in character. Below this point was a depression, at the lower end of which, about one inch from the bony mass felt above, was the squared-off end of the fibula to be felt. This bone, on being measured from the external malleolus to this fractured edge, was found to be nearly an inch shorter than the bone of the uninjured leg. It was therefore evident that we had to deal with a tearing off of the upper portion of the fibula by the action of the biceps muscle, which accident had also produced the probable dislocation and effusion of blood into the knee joint. No dislocation of the knee joint was, however, to be discovered at this examination, nor could it be reproduced by the manipulation, which was carried out in a careful and graduated manner. From the patient's description it was, however, undoubted that a moderate displacement had occurred. The limb was placed on a well-padded Volkmann's splint and cotton placed over the joint. Pressure was made upon the latter by the bandages used to secure the limb to the splint.

As this injury was to me a novel one, I occupied the time prior to my next visit to the patient in looking up in a hasty manner the literature of this subject and found but very scanty information upon such a lesion.

Nothing, for instance, is mentioned of this injury in Hamilton's work on "Fractures and Dislocations," nor in Malgaigne, nor in the recent work of Pick on "Fractures and Dislocations," nor, in fact, in any of the ordinary English works on surgery, except an allusion to it in Ashburst's "International Cyclopædia of Surgery." † But in the excellent work of Stimson on "Fractures" ‡ there is an account of this injury. In this latter work is a short summary of several of such fractures, and its concomitant paralysis from injury of the external popliteal nerve is also mentioned. Nothing was found in the standard French surgical works, and in German only a brief statement in Koenig * as to the existence of the injury and the possibility of its producing certain nerve symptoms, was met with.

My attention having been in this way directed by Stimson to the possibility of a nerve injury, the day after the etherization a more critical examination of the limb was made.

It was then found that there was a loss of sensation commencing about the middle of the outer aspect of the leg and running downward and extending over the central portion of the dorsal aspect of the foot from the ankle to the toes. In this latter region the sensibility was utterly lost. The patient was, moreover, unable to turn his foot outward or to draw up the ankle, showing that the peroneal and anterior groups of muscles had likewise been deprived of their innervation. The patient's condition was very satisfactory and no inflammatory reaction had shown itself in the joint.

A brief review of the original reports of the cases referred to by Stimson, and of several others which I found in a further investigation, and which will be briefly detailed hereafter, brought plainly into view the fact that the paralysis was due, as has been proved by a post-mortem section, to a division of the external popliteal nerve just above its division into the musculo-cutaneous and anterior tibial nerves. The question, therefore, arose whether the permanent disability that resulted in most of the cases that had recovered from the lesion to the bone could not be averted in this case by a surgical operation, having for its end the exposure and suturing together of the divided ends of the nerves. To aid me in the solution of this question I was assisted by the advice of Dr. E. C. Seguin and Dr. H. B. Sands, who kindly saw the patient with me and confirmed the diagnosis, as well as the treatment which I proposed. It was deemed advisable, however, to wait a few days until the tenderness of the knee joint had subsided, and thus avert the risk of inflammatory action, so easy to light up in parts not yet recovered from the irritation of the injury, in accordance with methods deemed most advisable in cases of recent patellar fractures.

Accordingly, on the tenth day after the injury, the patient was again etherized, and, under antiseptic precautions, a curved incision some six inches in length, the center of which corresponded to the gap between the fractured bones, was made alongside of and down to the posterior edge of the tendon of the biceps muscle. On exposing this, the external popliteal nerve was recognized and traced downward to the separated capitulum of the fibula, and was subsequently dissected out from that point downward for nearly an inch below the lower end of the fractured fibula, where it divided in several branches. The trunk of the nerve was found not to be divided, but bearing just below the separated piece of the fibula marks of contusion, such as swelling and ecchymosis, and a moderate constriction, as if some of the fibers had been crushed in. The nerve was still attached to the small fragment, and below this point it was apparently stretched by the action of the biceps. It was therefore carefully separated from the loose piece of bone and freed in this way from the further effect of tension. The depth of the nerve injury was not ascertained. The fracture itself, when brought clearly into view, proved to be not as large as it was supposed through the skin, and consisted simply of the styloid process of the fibula torn off and drawn up about an inch and a half (see figure). The surface of the body of the fibula was smooth, and it was evident that the fracture had occurred at the epiphyseal junction. A large amount of clotted and fluid blood was also met with, a good deal of which escaped from the wound. The lateral and posterior parts of the joint were seen to be open, but great care was taken not to disturb the clots which partly closed this rent. Two drainage-tubes, one running down to the joint and one anterior to it, were placed in the wound, the edges of which were closed and antiseptic dressings applied. The limb was again placed in the Volkmann splints.

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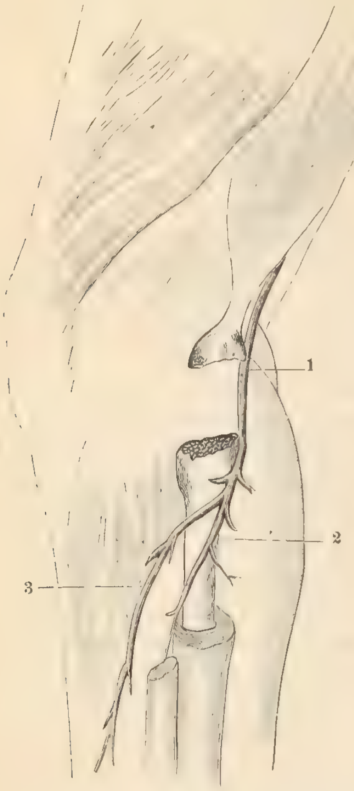
* Read before the New York Surgical Society, April 25, 1888.

† Vol. iv, p. 256.

‡ Page 586.

* "Lehrbuch der Chirurgie," Bd. iii, S. 498.



Fracture of the fibula with injury to the external popliteal nerve. 1, external popliteal nerve stretched by the separated fragments; 2, musculo-cutaneous nerve going to the peroneal muscles and to the skin of the lower leg and the dorsum of the foot; 3, anterior tibial nerve going to the externo- and tibialis anticus muscles.

Nothing special need be said regarding the progress of the case. No reaction occurred; the wound healed with two dressings in ten days, the tubes being removed when the first dressing was changed.

It was not considered practicable, from the small size of the detached fragment, to undertake at the time of the operation the wiring of the two fragments of bone together, nor was any attempt made, by permanently and strongly flexing the limb, to approximate them. A temporary essay in this direction, previously made, moreover, had shown only a moderate gain. It was therefore considered that any further or persistent trials of this latter manœuvre would be more likely to endanger the integrity of the joint, and that it would be wiser surgery to consider the safety of this part rather than the doubtful gain that might be obtained to the fracture. Moreover, in Herrgott's cases, as well as in some others, it did not appear that any disability ensued to the limb from the permanence of this separation.

At the end of two weeks from the operation a light plaster splint was applied, and the patient was allowed to get out of bed and go about on crutches. He left the city for his home at Newport at the end of six weeks, with the directions given to a competent nurse that galvanism and massage, subsequent to the removal of the splint, should be carried out thoroughly. Within four months after the injury he was walking about, even dancing. He subsequently went to Colorado, and, according to advices received within the last month, the patient has been able to walk a distance of ten miles, though making an occasional complaint of not being able to do as much at times as other young men on account of his lameness. In one of his recent letters he states that he is very much better, but fears that he will always limp a little.

The literature on the subject of this fracture, as has already been indicated, is quite scanty. The first reports that I have been able to find were presented to the *Société Medical du Haut Rhin*, in 1854, by Herrgott. These are also the same cases referred to by Gurlt,* and quoted from the latter by Stimson. The injury there detailed by Herrgott occurred in a woman of fifty-two years of age, who had had a fracture of the leg four years previously, and which had become thoroughly consolidated. She plunged one foot through a supposed closed cellar door, and, in drawing herself back with an effort, the other leg gave way with a crackling sound. There was found immediately afterward a slight tumefaction opposite the head of the fibula, where a delicate crepitation was felt by the patient, as well as by the surgeon. This crepitation was recognizable for twelve days after the accident; the movements of the knee were complete, though the patient was not able to execute them herself. There was apparently no paralysis from the injury to the nerve, though the patient suffered a great deal of pain, which continued for two months and a half. Two other cases were reported by Weber and Müller at the same meeting of the society. In Weber's case the patient, a male, very powerful, slipped, but did not fall. In endeavoring to preserve himself erect he felt something crack in his leg, and he was not able to walk. He recovered, with an incomplete paralysis of the extensors of the foot. In Müller's case two young men were wrestling; one of them was at the point of being thrown, and made a violent effort when the injury occurred. A fracture of the head of the fibula was recognized. Nothing is stated about the progress of the case, or the injury of the nerve, except what may be inferred from the statement that the calf was for a long time very painful,† and that his getting about was much prolonged.

Poncet, the writer of the article on fractures of the leg in the volume just cited, and whence some of the foregoing details have been derived, explains the persistent pains, and the feebleness of the contraction of the extensor muscles and even the paralysis, by the nerve being caught in the space between the fragments, and being subsequently compressed by the formation of callus. Another case is reported by Lotzbeck, of Munich, who, in 1865, wrote an article upon this subject.* This author states that Hyrtl also mentions the possibility of the tearing away of the upper part of the fibula during violent contraction of the biceps femoris, and that Fuhrer likewise enunciated that such fractures could be brought about by muscular contraction; but neither of them report cases of their own, and only refer to those of Herrgott, Weber, and Müller, already given above. These authors, however, more correctly explained the causation of the pains and paralysis, and placed it to the tearing and stretching of the external popliteal nerve at the point where it turns around the head of the fibula.

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* "Lehre von den Knochenbrücher," 1862, vol. i, p. 243.

† "Nouveaux dictionnaire de médecine et de chirurgie pratiques," vol. xix, p. 504.

Lotzbeck's case is a thoroughly detailed one, but in it the nerve symptoms were conspicuously absent. It is as follows:

A soldier, while mounted, fell with his horse in such a manner that his heel touched the ground, with the spur strongly burrowed in the snow. In trying to get up, with the leg much bent and without its touching the ground, a crackling was heard and a severe pain was felt in the knee joint. The patient then fell downward on his left side, but his left leg remained caught and free from the ground. This, the soiling of the patient's clothing elsewhere, corroborated. When seen, the knee was bent slightly—*i. e.*, to an angle of 160°—and the movements of the joint were attended with much pain. Close under the external condyle of the femur, in the midst of compressible coagula, was felt a hard mass, pointed above and broad below. This was slightly movable laterally and downward. It was recognized as attached to the biceps muscle, and below it was a hollow. It was considered to be the head of the fractured fibula. When the leg was strongly flexed and the mass in the ham was crowded downward, occasional crepitus was obtained. By maintaining the limb in a flexed position—*i. e.*, to an angle of 110°—the head of the fibula, which was originally 25 mm. from the body of the bone, was approximated, with the additional help of compresses and plaster, to a distance of only 5 mm. At the end of nearly five weeks the head of the fibula was found in its normal position, though somewhat enlarged. The measurement from the trochanter major to the top of the fibula on the affected side was only 1 ctm. less than on the uninjured side. The peroneal muscles, though slack and weak, soon regained their power under baths and massage, and fourteen days later the patient went to his work. The usual nerve pains observed by others, says Lotzbeck, were totally absent in this case.

In the "Medical Record" for July 18, 1876, is a letter from a Dr. Merriam, which I transcribe verbatim:

"Professor F. H. Hamilton.

"Dear Sir: Having sustained a fracture in my own person, resulting, in part, in non-union and slight deformity and disability, and not finding a record of any similar case in your "Fractures and Dislocations," nor in any other work we have here, I have considered it of sufficient importance to communicate it briefly to you. The injury occurred by being capsized while riding in my covered buggy, and dragged underneath it a short distance, my legs being on the ground wrapped in a buffalo-robe. When finally released from the buggy, I found I had sustained a fracture of the leg. It proved to be a transverse fracture of the tibia, just below the tubercle, two inches and a half below the joint of the knee, near the attachment of the ligamentum patellæ, and of the fibula, about one inch below the head. It is nine weeks since the accident occurred. I am about on crutches with a good tibia, but the deformity and disability consist in the fact that the superior fragment of the fibula, with the biceps attached, is drawn upward and inward, so that it lies across the under side of the knee. The head of the fibula seems to rest upon its articulating surface, while its inferior extremity is drawn upward and inward, and is loose and movable. This dislocation of the head of the fibula was not diagnosticated at the time of dressing the fracture by the attending surgeon, and, in fact, I do not know that anything could have been done to overcome the power of the biceps on such a short fragment. The consequence is, a loss of the fullness and prominence of the external hamstrings, and weakness of the external part of the knee, being inclined to easily turn out. The superior extremity (inferior fragment of fibula), seems to be attached by bony union to the tibia at the seat of fracture, having a depression between that and the superior fragment. I am able to rest my foot upon the floor, but bear no weight upon it. There has also been a paralysis of the extensors of the foot and toes, with extreme sensitiveness or hyperæsthesia of the dorsum of the foot and toes, which still continues.

"There has been no appearance of bruise or injury to the anterior surface of the limb, but my foot droops and toes drag. I have been led to communicate this to you from the fact that I could not find anything of similar kind recorded.

"E. D. Merriam, M. D."

To this Dr. Hamilton replied, through the same journal:

"The case related in the accompanying note is of special interest. The fracture of both bones of the leg at this point is unusual. The refusal of the fibula to unite, on account of the contraction of the biceps, suggests the propriety of flexing the leg in treating such a fracture, or of dividing the biceps at once.

"The hyperæsthesia, pain, and paralysis of certain portions of the foot is plainly due to some injury inflicted upon the external popliteal nerve, probably by the pressure of the upper fragment; and I have said to the doctor that the biceps ought to be divided, or the upper fragment of the fibula dissected out."

The most satisfactory account of this injury, however, is that offered by Duplay in 1880,* who presented two examples of this variety of fracture, which he states had not up to this time had attention drawn to it, but which, nevertheless, is of much importance by reason of the severe complications which seem to often accompany it. In both his cases the mechanism of the fracture was nearly the same. The lesion was met with in two men, one forty-eight and the other sixty years of age. They were both caught in some machinery and their bodies struck against a neighboring wall. They thereby sustained multiple injuries, and therefore are not so clearly examples of the effects of muscular contraction as some of the preceding ones. On a level with the head of the fibula in each case was recognized under the skin a little tumor of the size of a large almond, very mobile, laterally elevated in flexion, and sinking down in extension. This bony mass was continuous directly with the tendon of the biceps. Below it was found a depression capable of admitting the end of the thumb. The articulation of the knee had an excessive lateral motion, sufficient even to produce a partial luxation.

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* "Beiträge zur Casuistik der Frakturen am Capitulum fibulæ," "Memorabilien," April 26, 1865.

* "Bulletin et mémoires de la soc. de chir. de Paris," vol. vi, p. 218.

In the second case the mechanism of the tearing was more evident from the patient's description. Duplay, several days after the accident, remarked in the first one of his injured men that the muscles on the anterior peroneal surface of the leg were completely paralyzed, and no longer responded to electrical excitation. At the same time he recognized the existence of patches, anæsthetic and analgesic, on the dorsal face of the first and second toe and on the dorsum of the foot and above the external malleolus, corresponding, in other words, with the distribution of the musculo-cutaneous nerve. In the second patient, who died suddenly, the symptoms of similar paralysis also existed, and the specimen was presented by Duplay to the Surgical Society of Paris, with the description of the case. The nerve was found to be torn across and contused, and the ends rested between the two fragments of bone. The situation of the fracture in the bone was just above the tibiofibular articulation, which was opened by the accident.

In the discussion that followed this case, Perrin gave the particulars of a similar case of his own, where a soldier had his leg jammed between the ground and his horse, after the latter had fallen. A fracture occurred during the violent efforts of the man to dislodge himself from his position. Paralysis followed. Two months later the nerve lesion was unchanged. The surviving case of Duplay was seen by another surgeon at the end of five months, and then the man could scarcely go about even with crutches.

That the influence of the biceps muscle is of greater importance in the production of this injury than the traction on the lateral ligament seems to be proved by the difficulty that has been met with in bringing it about in the cadaver by several observers who have tried it. For instance, Levrat reports* that he could not produce this fracture on the cadaver, and Strauss and Couette came to a similar conclusion. Bonnet,† in six trials on the cadaver to produce a laceration of the external lateral ligament and luxation of the knee by a forced adduction of the leg, was only able in one of these trials to produce the fracture now under consideration.

In this brief review of these cases that I have been able to gather together for reference, I hope that it will be acknowledged by my colleagues here present that something more than the flexion treatment of the fracture should be resorted to. As the prognosis in reference to the paralysis is bad, I feel that it would be proper, under similar circumstances, to do as was done in the case which I have reported to you—to wit: to expose the nerve, secure together the divided ends, if such are found to exist, to free it from tension should it not be torn across, and possibly, if the upper fragment is sufficiently large, to bring it, or attempt to bring it, by sutures or nails, in apposition to the rest of the fibula. Furthermore, that nerve suture should also be applied to the cases of this injury when encountered at a period remote from the injury, and when time (say four to six months) and treatment have proved of no avail; such might perhaps have been of benefit in the cases of Dr. Merriam and others cited in the foregoing pages.

Last fall a somewhat similar nerve complication, from direct violence, occurred under my observation. It was as follows:

Case II. *Fracture of Tibia and Fibula near the Knee Joint, with Paralysis of the Left Popliteal Nerve.*—The patient, John Kissenberger, aged twenty-nine years, a laborer, was received into the New York Hospital, October 7, 1887, with the history that, a few hours previously, a large piece of timber had fallen on his left leg, injuring it severely in the region of the knee joint. The joint was much swollen, and, after waiting a few days, with fixation of the limb by a splint and pressure with cotton and a bandage, an examination was made by Dr. Weir, under ether, October 15th. There was found a fracture of the fibula an inch and a half below its capitulum. There was also a fracture of tibia, an inch and a half below its upper extremity, extending outward, backward, and slightly upward. The head of the fibula did not seem to be drawn upward. There was an area of sensory paralysis, commencing about two inches and a half below the point of fracture of the fibula, and extending down to the ankle, involving in this distance the antero-external aspect of the leg. From the ankle a comparatively narrow area of skin paralysis extended down the dorsum of the foot to the root of the first and second toes. There was some slight impairment of sensibility in the skin of the great and second toes. Muscles supplied by the external popliteal nerve were probably paralyzed. This point was difficult to determine on account of the injury to the leg and of the pain on motion.

November 16th.—At an examination made on this date there was little change in area of sensory paralysis. Not quite as wide on the leg as at first, but it extended higher on the anterior surface of the limb, at the upper part nearly to the tubercle of the tibia. On the dorsum of the foot the area was wider, and now extended up to the toes for about half their length, involving in this way the first, second, and inner half of the third. The foot drooped, and the patient was unable to draw it upward.

21st.—Good union in fracture. Patient wished to leave the hospital, and against advice was discharged improved.

He was seen by me in March. He was then walking badly, with the aid of two canes. He said, however, that the motion of the foot was increasing. The area of skin insensibility had diminished on the leg, but the dorsum of the foot was yet completely insensitive to feeling. He was requested to return if improvement ceased.

I have not attempted to collect together with any thoroughness the cases of this variety of injury, though a somewhat similar case is described by Terrier.*

It occurred in a student who fell on his side in descending some stone steps. A fracture was recognized a fingerbreadth below the head of the fibula, with a slight anterior displacement of the lower fragment. There was also a slight turning inward of the foot. Whether the fracture was due to direct violence or to the indirect effect of the supposed tibio-tarsal displacement could not be determined. There was, however, no drawing upward of the upper fibular fragment. The patient suffered then and for some time afterward most intolerable pain, especially on the dorsum of the foot and at the root of the nails, from tetanic contractions of the peroneal and anterior muscles. There was also insensibility of the upper part of the dorsum of the foot, with painful formications at the periphery of the anæsthetic part. The pains persisted in paroxysms, gradually becoming less, for more than a month, when the splints were removed, and a slight degree of talipes equinus was found. At the end of six weeks the patient began to go about, which markedly increased his severe pains in the leg, and trophic changes showed themselves on the top of the foot, such as desquamation and cellular induration. At the end of a year the patient had fairly recovered, but still had his trophic changes and insensibility in the dorsum of the foot; but he had become a morphine consumer.

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* "Lyon médical" of September 18, 1882, page 51.

† "Des maladies des articulations," 1845, p. 187.

* "Société de chirurgie," 1880, p. 222.

Verneuil, at the same meeting, cited a nearly similar case, where, however, both the tibia and fibula were broken just below the tibial tuberosity. There also existed a wound, but it is not stated that it communicated with the fracture. When bony union had been completed there was found to continue a paralysis of the extensors with analgesia of the foot and anterior face of the leg. Electricity partially restored excitation of the muscles, but only after a long use. When the patient, an American, returned home, it was, however, yet necessary to wear an apparatus to draw up his foot in order to clear the ground.

These instances would justify, where no improvement takes place, a resort to nerve suture.

37 West Thirty-third Street, New York.

EXTRA-UTERINE PREGNANCY,

WITH HISTORY OF A CASE.[*]

By WILLIAM McCOLLOM, M. D.,

BROOKLYN, N. Y.

Mrs. H., a highly cultured and finely formed woman, thirty-five years of age, of excellent health, never had had symptoms of uterine disease of any kind. She was the mother of two children, the oldest six years and the youngest fourteen months. She nursed the youngest up to her last sickness five weeks previous to her death, which occurred on January 7, 1888. She recovered good health after the birth of her last child, and was very active in her domestic duties and as a teacher to classes in painting until her fatal seizure. She menstruated once or twice after the birth of the child, the last time in June, about seven months before her death.

I first saw the patient on December 2d; was called on account of severe abdominal and pelvic pain, which came on suddenly and without known cause. She was at this time having a little sero-sanguinolent discharge. Bimanual examination of the uterus showed some enlargement. The pains were paroxysmal in character, which led to a suspicion that normal pregnancy of recent date might exist. Rest in the recumbent posture was enjoined, morphine and atropine given, and full relief ensued. I saw her again once or twice in the course of ten days, without noticing other change in symptoms than marked sensitiveness over the hypogastrium, more marked over the fundus uteri. Nothing could be felt abnormal in the vaginal fornix, neither could I discover any abnormal growth in the abdomen or pelvis; this was made difficult on account of the very firm abdominal muscles, heavily covered with fat, together with sensitiveness on pressure.

At about the end of two weeks from the first attack she was again seized with excruciating pains, closely resembling in character parturient pain. The external os was patulous, with a little bloody flow from the uterus; this attack was followed by an acute peritonitis which required large and frequently repeated doses of opium. No change from the dorsal decubitus could be endured, and the bladder could only be relieved by the aid of the catheter. Large and frequently repeated hot vaginal and rectal douches with hot fomentations over the abdomen helped to make her more comfortable for a period of two weeks, though she suffered severe paroxysmal pain, recurring every two, three, or four days. Two and three days before her death the uterus expelled pieces of decidual membrane of considerable size. The effort of the uterus to expel the decidua gave, I presume, the labor-like character to the pains.

On the evening of the 6th of January she had agonizing pains for an hour, followed by sleep for a few hours. I found her the next morning at ten o'clock in a state of collapse, unconscious, and unable to swallow. The uterus was pushed down in the pelvis and the vaginal vault showed evidence of blood-pressure from above. Hypodermics of brandy, ether, and atropine were used without influence. She died at five o'clock, p. m., from hæmorrhage into the abdomen, as shown by the autopsy made the day following her death.

The autopsy was made by my friend Dr. Benton, who had seen the case with me in consultation, and it was hurriedly made on account of the late hour and failing light. The abdomen was distended from blood clots. Extensive peritoneal adhesions were present, and one side of the fœtal cyst only was adherent to the abdominal parietes, but the examination was not made with sufficient accuracy to define its exact point of attachment, which was high up in the abdomen. The uterus, broad ligaments, Fallopian tubes, ovaries, and cyst, containing the fœtus in its membranes firmly distended by the liquor amnii, were removed, and I present them for your inspection.

The cyst wall had ruptured so that the finger passed down upon the fœtal membranes. You will easily see the rupture in the specimen before you. A smaller rupture had evidently occurred at an earlier stage, and a partially organized clot was quite firmly adherent to the cyst wall. The entire growth when removed was of the shape and size of a small or medium-sized orange, and of about ten or twelve weeks' growth.

An examination of the specimen seems to show that the point of conception was in the ostium abdominale or fimbriated extremity of the right Fallopian tube, and as development progressed the cyst formed an attachment on one side to the abdominal parietes; its only other attachments were points of union with the right broad ligament and fimbriated extremity of the tube. The placenta was attached to the posterior wall of the cyst.

I believe that the ovum in this case did not develop in the tube proper, though Lawson Tait teaches that all extra-uterine fœtation is primarily tubal, and says: "I have known at least twenty post-mortem examinations of women who have died from ruptured tubes. In not a single instance which I have found recorded has the pregnancy been anywhere but in the tubes." When the growth is in the abdomen and the tubes normal in size, he would have us believe that the tube ruptured at an early date with subsequent complete healing of the same, and offers in evidence the statement "that the tubes in nearly all such pregnancies have been spread over the wall of the cyst and forming part of it." An examination of the specimen will show that the tube is normal, with no evidence of dilatation or rupture, and that the tube in no sense forms a part of the cyst wall by being spread out over it. The fimbriæ are only adherent to the cyst.

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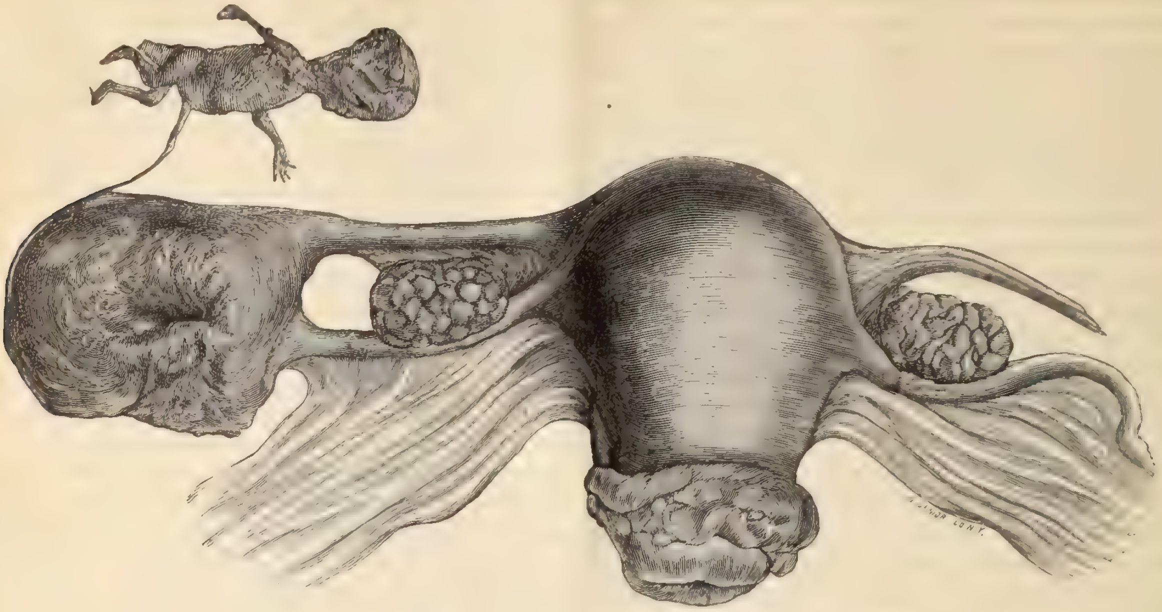
[*] Read before the Kings County Medical Association, May 1, 1888.



In this case, in the earlier stage the diagnosis could not have been made with certainty. The ordinary symptoms of pregnancy up to the time of the first seizure were absent. So far as I know, there were no subjective symptoms which would have excited suspicion of the condition existing until shortly before the final sickness. The woman was in good health, nursed her baby, had not menstruated for months previous to conception, said she had not had any of the symptoms she experienced in her other pregnancies, and only complained that she had suffered from pain at times, sometimes referred to the left and at other times to the right side of the abdomen.

In my failure to make out any abnormal growth in the pelvis or abdomen, with the uterus somewhat enlarged but in its normal position, the pains, like labor-pains in character, with a little bloody flow at times, inclined me to the belief that uterine pregnancy existed, and I acted in accordance with this belief up to the time of the severe seizure, which was followed by an acute peritonitis that was so alarming in character as to prevent any further examinations or active interference other than to control inflammation and relieve pain.

After the acute peritonitis I suspected extra-uterine pregnancy, and the opinion was strengthened two days before her death by the discharge of decidua from the uterus; but on the theory that if the peritonitis had been caused from rupture of the cyst and that the inflammatory action was subsiding and the abdominal sensitiveness and pain growing less, and in view of an inability to locate or make out any pelvic or abdominal growth, there seemed little to do but to wait for further development; but, unfortunately, a serious rupture occurred and fatal collapse followed.

If the diagnosis could have been made before the first rupture and the growth located, electricity should have been used to check further development. The abdominal variety of misplaced pregnancy is specially difficult to diagnosticate in the early months.

The symptoms commonly present in tubal pregnancy are generally absent, and the ordinary symptoms of gestation may not exist, for the uterus and its appendages are not necessarily markedly disturbed in function when the fœtal sac is only attached to the abdominal parietes, and not to uterus, ovaries, or tubes.

Almost every case has some special characteristics of interest when carefully studied, and, as the condition is usually so difficult, and many times impossible to make out before rupture of the sac, all cases should be carefully reported and critically studied.

This is the second case occurring in my own practice. The first case I reported to the Kings County Medical Society, July, 1878, and it was published in "Proceedings," vol. iii, No. 5. That was a case of tubo-abdominal pregnancy—a fœtal development of nine months. The mother carried the same eleven years, menstruating quite regularly until the menopause, and enjoying comfortable health until a few months before her death. A little time before her death a few bones of the fœtal development were passed *per rectum*, and the skeleton and macerated soft tissues were removed post mortem. I preserved the bones, and they are on the table before you.

The ætiology of misplaced pregnancy is far from being settled, though we have had much speculation regarding it. An old theory, that fright or fear at the time of intercourse was a prominent cause, and that the unmarried and widows had proportionately suffered more than the married, is not sustained; fuller observation and more knowledge of the subject seems to disprove this.

Virchow noticed the fact that the condition was usually associated with adhesions of the internal genital organs, and believed that such adhesions interfered with the mobility of the ovary, and thus extra-uterine fœtation resulted; but it is quite probable that the adhesions more often are the result of the pregnancy than the cause of it. Imperfect action of the oviduct may favor abdominal pregnancy. Tait's theory of the cause of the abnormity is that there has existed salpingitis, with destruction of the cilia, thus allowing the ovum to adhere to the tube, and that all ectropic gestation is primarily tubal.

Ectropic fœtation is of increasing frequency, or the condition was formerly not infrequently overlooked, and death attributed in such cases to other causes.

The literature of the subject is becoming voluminous. Dr. Garrigues says that he has found a record, in a period of four years, of over two hundred cases.

Has increased civilization and the more unnatural sexual life of woman, with the almost constant effort to prevent conception with the cold douche following orgasm, which suddenly contracts the uterus and favors congestions and inflammations, had to do in producing this unfortunate physiological accident? Or is it more probable that the increased frequency of pelvic inflammations, adhesions, and diseased tubes act to interfere with the normal action of the generative function? The plan of creation can not be so defective as to result in the sacrifice of so many valuable lives. There is good reason to believe that ectropic gestation is on the increase, and it will be an interesting study to determine, if possible, the underlying causes.

Nothing in such cases is more important than the making of a correct diagnosis, and this before rupture, which is many times promptly followed by fatal collapse that gives no opportunity for laparotomy. Unfortunately, the symptoms are not uniform. Lawson Tait thinks a diagnosis before rupture very difficult, and questions its being made. Dr. Wylie says that the diagnosis is often extremely difficult, if not impossible. That it is at times difficult and impossible to make admits of no question, but that it has, in a good many instances, been clearly made before rupture is evident, and should impress us with the belief that the condition can often be made out in season for operative interference. Careful and painstaking study should be made—a careful study of general symptoms as well as by the intelligent and educated sense of touch—to determine the diagnosis as early as possible.

When the more ordinary symptoms of pregnancy are present—unfortunately, they are not always present—any abnormal symptoms should be carefully scrutinized; recurrent abdominal or pelvic pain; the presence of an irregular serosanguinolent discharge, however slight, should excite suspicion and lead to a careful examination; and if the external os is found patulous and the uterus not sufficiently enlarged to correspond with the earlier symptoms of pregnancy, and it is probable that normal gestation does not exist, the uterine sound should determine the question. Severe pain coming on suddenly and without known cause, such pain recurring at intervals of days, and particularly if paroxysmal in character, should excite grave suspicion. The intense pressure of the cyst wall, and, no doubt, rupture of the serous coat of the sac, give rise many times to agonizing pains before a final serious rupture occurs. A good deal of importance should be placed upon the character of the pain, and that it so often closely simulates parturient pain. In the case reported the patient would not have appeared different in the active second stage of normal labor; the agonizing pain, the brief interval of rest, and the recurrent pain made me feel that the uterus was in active spasm until the presence of my finger in the patulous os showed that such was not the case. That true uterine pain is sometimes present when the uterus is expelling decidual membrane is evident. The expulsion of decidua, unless it is thrown off in shreds so as to elude detection, is pathognomonic, and should only be mistaken for membranous dysmenorrhœa, which is not likely to appear suddenly, and can be excluded if not previously existing.

When the general symptoms are supplemented by a growth of small or large size in the pelvis or abdomen, though its nature can not be clearly defined by the touch, the evidence should be deemed sufficient to call for operative interference in the use of electricity, which is not likely to do harm if the diagnosis is not beyond question.

It is not unlikely that a portion of the cases reported as ectropic fœtal growths, and treated by the galvanic or faradaic currents with prompt and complete recovery, were not embryotic developments.

In a recent report of a case by an authority it is stated that a five-months' fœtus was killed by electricity, and completely absorbed within three weeks. Is it not more probable an error was made in diagnosis? If not, it was a most marvelous result.

If fœtal death should be secured to prevent rupture of the cyst and death from hæmorrhage or peritonitis, the electric or galvanic current should be used in pelvic and abdominal growths whenever a fair probability exists of abnormal gestation, though the diagnosis can not be clearly or positively made. It seems to be in evidence that rupture does not take place after the death of the fœtus. Dr. Janvrin reports one case of death from hæmorrhage eighteen hours after treatment by galvanism from rupture of an artery on the wall of the sac, and he presumes that the ruptured artery did not result from the galvanism.

The all-important question of treatment is not yet settled. There is little unanimity of opinion among those who have studied the subject specially and practically. When we can clearly make out a case of extra-uterine fœtation before rupture, what shall we do? This is an important question. The German, English, and a considerable portion of American gynæcologists favor laparotomy; but only Martin, of Berlin, and Lawson Tait claim to have had much success, and Tait's successes have been in abdominal section after rupture of the sac. Few authorities, perhaps, would differ with Tait in his teaching to open the abdomen and remove the growth after rupture and hæmorrhage, but, unfortunately, in a large proportion of cases the operator is not at hand when rupture takes place and the hæmorrhage produces fatal collapse; then why should not the life of the growth be destroyed, though abdominal section may be required later on? American gynæcologists are pretty equally divided upon the question whether or not the growth shall be removed by the knife or its life destroyed by electricity. I think, however, the weight of opinion is in favor of electrical fœticide. A paper in the "Annals of Gynæcology" for February, 1888, in favor of "Electricity in Extra-uterine Pregnancy," by Matthew D. Mann, M. D., is well worth perusing.

It is evident that the results obtained in primary laparotomy—*i. e.*, abdominal section after the fœtus is of sufficient development to be of viable age—have been far from satisfactory. Dr. Robert P. Harris, of Philadelphia, in a very careful and painstaking paper published in the "American Journal of Obstetrics and Diseases of Women and Children" for December, 1887, states that the operation is "a very rare and fatal one"—so rare that only one operator out of twenty-six has had a second case; he shows that death has resulted from the operation in eight cases out of nine. Theorizing and opinions given will be of little value until better results are obtained.

Statistics show beyond question that better results have been obtained in secondary laparotomy—that is, in abdominal section to remove the ectropic cyst and its contents after the death of the fœtus. Dr. Martin, of Berlin, however, has recently reported nine operations for extirpation of fecundated tubes with eight successes; in the ninth the tube had ruptured with hæmorrhage before the operation, and death resulted. If a skilled operator like Martin can show as good results by abdominal section as have been secured by electricity, it does not follow that the method shall be generally advised, for specially skilled operators are not often obtainable away from the larger centers where cases are liable to occur. A method not requiring the highest degree of skill must be the available one in general practice.

Dr. Thomas has done more than all others to popularize in America the method of electrical fœticide and secondary laparotomy when required, and his success has been remarkable, having operated twelve times without failure to save life. He would limit the practice to the earlier months of gestation; but when the fœtus attains a stage of development capable of maintaining independent life he would attempt to save both mother and child by abdominal section.

Lawson Tait, on the contrary, says: "What right have we to murder these children either by immoral delay or galvanic shocks? Our business is to save life and not destroy it." He says that there is no question but that the placenta continues to grow after the death of the fœtus, and that it will "go on developing enormously after the fœtus has died from natural causes; then why destroy the fœtus when the source of danger is in the placenta?" Herman also says that the placenta develops after the death of the fœtus. It may for a brief time, but I do not think there is good evidence to establish it as the rule. It is not probable that the placental development goes on long after the death of the fœtus in the ectropic cyst if it does not in normal pregnancy after the death of the ovum. In the death of the fœtus the function of the placenta must cease without much lapse of time in all but exceptional cases.

It is notable that those who have practiced electrical fœticide and secondary laparotomy, and consequently have had much the best opportunity for such study, should not have discovered that the placenta goes on developing enormously after fœtal death, while those who have not had such opportunity for determining the question are so emphatic in statement regarding it. Tait's reasoning is certainly open to criticism, and his moralizing should have no consideration if it can be shown that the chances of saving the mother's life are increased by destroying the abnormal ectropic gestation. Yes, our business is to save life, and the mother's life in particular; not the life of an embryo, to the great risk of the life of the mother.

It is, perhaps, yet a nice question whether the treatment in the earlier months before rupture, and when the diagnosis can be clearly made, shall be by abdominal section or by galvanic or faradaic currents to destroy the life of the ovum, and then waiting until symptoms arise which render surgical interference necessary. Experience has shown that the mortality from laparotomy after fœtal death has been less than when made during the life of the ovum, while the vessels of the sac and placenta are full and active.

The more recent experience of Tait, Martin, and others of less experience, seems to show that abdominal section, and the removal of the ectropic growth promptly after rupture of the cyst when the condition can be made out, is the course to be recommended. It seems to me, in view of the fact that in many cases the diagnosis is difficult or impossible, and that fatal hæmorrhage is liable to occur from rupture at any time, and a competent operator can not always be obtained in season to operate after rupture occurs, that the galvanic or faradaic current should be used. It would seem that the galvanic should be preferred, for it is probably less likely to rupture the dangerously distended cyst walls.

From a pretty careful examination of the more recent literature of the subject, I am convinced that galvanic treatment to the death of the ovum should be recommended in the earlier months in all cases before rupture of the sac, and that abdominal section should be as universally practiced after rupture, whenever the condition of the patient is such as to give hope of success.

ÆTIOLOGY OF PUERPERAL FEVER.*

By JAMES P. MARSH, M. D.,
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Question First: "What evidence can be adduced to show that the puerperal fevers are caused, either directly or indirectly, by micro-organisms?"

In arising to reply to this question, I feel it incumbent upon me to turn my attention to the term puerperal fevers. Professor Parvin defines puerperal fever as "an acute febrile affection, heterogenetic, contagious, and often epidemic, attacking women in childbed." † I am well aware that it is not politic for a disputant to preface his remarks with a string of objections, but, nevertheless, I feel constrained to take exceptions to the term puerperal fever, and also to this definition of the condition commonly known as "puerperal fever." These objections are based upon the ground that the pyrexia of the disease is only a symptom of secondary importance, and, as pathologists are very well agreed that in inflammatory affections the initial lesion is a lymphangeitis,* it is therefore suggested that the condition might properly be called obstetric lymphangeitis; but to declare it "heterogenetic" is to affirm that which is by no means conceded to have been proved. I submit that a definition must convey to an inquirer that which is understood by the majority of competent persons when the said term is used. Hence by puerperal fever we shall understand a lymphangeitis contagious, often epidemic, which attacks women in childbed.

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* Read before the Medical Association of Troy and Vicinity, May 1, 1888, as the opening paper in a discussion on "Puerperal Fever."

† Theophilus Parvin, "The Science and Art of Obstetrics," Philadelphia, 1886, p. 560.

Returning to the proposed question, it is to be observed that it has been framed in a peculiar manner, and that the use of the plural number carries with it the direct admission of there being more than one puerperal fever. Should any of my hearers, therefore, take the ground that there is a puerperal fever *sui generis*, then also must they admit that the lying-in woman is subject to all the grades and forms of pyæmia and septicæmia.†

Having thus performed the duty imposed upon every discusser of first accurately defining his subject, we find that the inquiry as regards the cause or causes of this disease must embrace, at least, three several factors:

1. As regards the manner in which the state of pregnancy might influence the condition of the maternal organism in those respects which may relate to either its receptivity or refractoriness toward micro-organisms.
2. As regards the natural history of micro-organisms, so far as the lying-in woman would furnish a suitable nidus for their birth, growth, and decay.
3. As regards the favorable or the unfavorable environment of both the woman and the micro-organisms.

Now, it is purposed to briefly set down under each one of these divisions the well known and established facts which may relate to that part of the subject, but before I proceed so to do let me detain you for a moment by a consideration of the broad rules of evidence according to which the inquiry must be conducted.

If evidence of the unfailing presence of micro-organisms of a certain definite morphological character in the lochia or tissues of patients suffering from puerperal fever can be adduced, and, furthermore, that said organisms are found in no other disease, or, on the other hand, in cognate diseases, it is still maintained that it is not proved that these micro-organisms are the direct or only cause of said "fever." It is self-evident that they must be either complete or partial cause—complete or partial effect, which relation may be in either case direct or indirect. To establish sufficient proof, it must be incontestably shown that these organisms, alone and without the chemical products of their existence in a previous environment, will originate "puerperal fever" in a patient who has nothing in her previous or present condition, other than being in childbed, which would render her either susceptible or refractory to said micro-organisms. Supposing that this can be demonstrated, then, in addition, to render the proof conclusive, it must be established that the condition known as puerperal fever never arises without the presence of these organisms. If proof of the foregoing propositions be found, it is still necessary to declare by facts whether these organisms are the direct poisoners or that the products of their existence—the *débris*—are the real producers of the disease.

So difficult is it to eliminate all sources of error in investigations as to the ætiology of puerperal fever that it is not surprising that of the many theories which have been proposed, few have advanced much further than the stage of an hypothesis. The mind of man is of an inquiring tendency, but his investigations into the causes of things have in the past been very discouraging; he has usually solved one problem by leaving two conundrums in place of it. This has been pre-eminently true of the ætiology of puerperal fever, and there is but one way through the labyrinth of its vast literature. Place on your right hand all the known facts, on your left all the proposed theories; walk boldly midway between the two—never confounding the one with the other—and you may, after many hours of hard toil, arrive at the faint glimmering twilight of the conception of the ultimate cause, but the clear sunshine of the exact relation of cause and effect has never been, nor never can be, a concept of the human mind. Hence I am led to say, with Sir William Aitken,* that, after centuries of toil and study, the final cause or causes of any disease are still absolutely unknown. Having then told you that it is impossible to solve the riddle that we have in hand, and yet inconsistently following hope, the one great chimera of mankind, we proceed to those facts which may be said to have been definitely settled.

I think it well established that during pregnancy there occurs a marked diminution of the red blood-corpuscles;† that the function of these corpuscles is mainly that of carriers of oxygen;‡ that the vitality of the individual cells composing the body is seriously impaired, if they do not receive a sufficient supply of oxygen;# that there is during pregnancy an increase in the watery constituents of the blood, and that, as a consequence of this hydræmia and by reason of the pressure of the gravid uterus upon the abdominal veins, there is often induced an œdema which by preference manifests itself in the lower extremities, and frequently extends to the labia, vagina, and the lower segment of the uterus;‖ and that where an œdema arises from mechanical

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* Arpad G. Gerster, "The Rules of Aseptic and Antiseptic Surgery," New York, 1888, p. 179 *et seq.*, especially Note I, p. 183.

† Fordyce Barker, "The Puerperal Diseases," New York, 1874, pp. 476 and 477.

* Sir William Aitken, "On the Animal Alkaloids," Philadelphia, 1887, preface, p. v.

† William T. Lusk, "The Science and Art of Midwifery," New York, 1883, p. 92.

‡ John C. Dalton, "A Treatise on Human Physiology," New York 1882, p. 219.

Ibid., p. 232.

‖ P. Cazeaux, "A Theoretical and Practical Treatise on Midwifery. Annotated by S. Tarnier," Philadelphia, 1873, p. 479 *et seq.*

pressure there also ensues a retardation in the rapidity of the blood-current and an increase in the blood-pressure.[*]

In the lochia of nearly every healthy woman there exist micro-organisms of different varieties.[†] Pasteur has divided micro-organisms into two classes. The first consists of those whose existence is jeopardized in an environment deprived of free oxygen; the second contains those whose existence is jeopardized in an environment where there is present free oxygen. The first class he calls *aérobies*—oxygen-living; the second, *anaérobies*—non-oxygen-living.[‡] Both of these classes are represented in the micro-organisms found in the discharges and tissues of healthy and unhealthy puerperal women. The prevailing organism, however, both in the healthy and the unhealthy, is a micrococcus, which is very abundant in women who are passing through or are about to enter upon the state of puerperal fever.[#] These micrococci belong to the vegetable kingdom, and, as regards their structure and reproduction, are the most simple of living beings.[‖] They multiply by *spontaneous fission*, and sometimes this division is not complete, and it is one of these forms which constitutes the chain-micrococcus.[△] Now, it is this chain-like micrococcus that appears to have the most direct relation to puerperal fever, and also it has, so far as microscopic evidence is concerned, been found in erysipelas, diphtheria, and scarlatina.[◊] When the chain-micrococcus has gained admittance to a wound, it especially selects the lymphatics for its seat of action and rapidly extends along these vessels and the lymph-spaces.[‡] It may be truthfully affirmed that there is no more favorable ground for this organism than the wounded lymphatic system of the living mammal.

We have all heard puerperal fever called puerperal septicæmia,[‡] and many of us have thought with justice. Now, in septicæmia there is present a true bacillus, and it is, perhaps, the very best example of the anaerobic bacteria.[‡] This bacterium is also the leading member of the class which begins the process of putrefaction.[**] It is found in the lower part of the intestines, where there is no free oxygen,[††] and its malignity seems to consist in its wonderful power of reproduction. Its growth is attended by very noxious odors, for it liberates the sulphur and phosphorous gases from the tissues. It is found wherever dead albuminoid substances are undergoing decomposition. It is very numerous in cadavers, making its appearance a few hours after death.

The almost unfailing existence of large quantities of these two micro-organisms—the chain-like micrococcus and the septic bacillus—in the discharges of women suffering from puerperal fever has been conclusively proved, but whether they are the cause or effect is still *sub judice.* Hausmann, of Berlin, observed that septic symptoms followed the injection of septic material into the uterus of a pregnant rabbit.[*] An excited experimenter might here see the cause of septicæmia, but the philosophic biologist would remember that there has been inoculated not only the living organisms, but also the chemical results—the *débris*—of their existence in a previous environment. If we separate from each other the bacteria and the fluids in which they have lived, the results with either are negative.[†]

At this stage in our inquiry perhaps it would be well to turn our attention to the vexed question of ptomaines. When I use the word ptomaines I mean the alkaloidal products of a purely chemical process which, without the intervention of micro-organisms, is asserted to arise in dead animal tissue.[‡] These alkaloids are said to exert an action upon the living organism very similar to the physiological action of atropine.[#] It is claimed by certain experimenters that these alkaloids are the originators of the class of diseases which we are discussing to-night.[‖] Accept this position, gentlemen, and you may, reaching back over the expanse of two thousand years, clasp hands with the immortal Hippocrates. The march of centuries, then, has accomplished nothing; the old humoral pathology leads the van; the cycle of medical time has made its revolution, and we are again at the starting-point. Now, what I wish to say is that no chemical substance has been proved to have the power to originate out of its own environment a product which, as to its molecular formula, is identical with said substance. According to Brieger, it requires one thirteenth of a grain of mydaleine to kill a rabbit; the microbes on the point of Pasteur's needle will do the same. I am so bold to say that Brieger could not recover from the remains of said rabbit more mydaleine than would naturally be found therein, while Pasteur would harvest millions of microbes for every one planted. I put the whole subject in a nut-shell when I declare animal alkaloids to be unreproductive and microbes to be reproductive. It is true that Brieger has found poisonous alkaloids in a dead body;[△] but this signifies nothing until he has proved that that given cadaver was not acted upon by micro-organisms previous to his analysis, or that the alkaloids are the direct food of the microbes, and are consequently pre-existent. Now, when a person receives a poisonous dose of atropine, there is no increase in the temperature;[◊] therefore, if an alkaloid like atropine is the cause of puerperal fever, there should be no pyrexia. As corollary to the foregoing propositions I may assert that, if any one doubts the power of microbes to produce a direct chemical change, I refer him to the proved fact that the organisms found in certain sulphur waters have the power of reducing the sulphates of said waters.*

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[*] Austin Flint, "A Treatise on the Principles and Practice of Medicine," Philadelphia, 1881, p. 35.

[†] A. Charpentier, "Cyclopædia of Obstetrics and Gynæcology," edited by Grandin, vol. iv, p. 302.

[‡] "Louis Pasteur," from the French, by Lady Claud Hamilton, New York, 1885, p. 53.

[#] Charpentier, *loc. cit.*, p. 308.

[‖] George M. Sternberg, "Photomicrographs," Boston, 1884, p. 130.

[△] *Ibid.*, p. 131.

[◊] From the conclusions of Lomer, Charpentier, *loc. cit.*, p. 313. See, also, Parvin, *loc. cit.*, p. 567.

[‡] Gerster, *loc. cit.*, p. 170.

[‡] W. S. Playfair, "A Treatise on the Science and Practice of Midwifery," Philadelphia, 1880, p. 589.

[‡] W. Watson Cheyne, "American Journal of the Medical Sciences," vol. 92, p. 80.

[**] "Life of Pasteur," *loc. cit.*, p. 195.

[††] *Ibid.*, p. 194.

[*] Charpentier, *loc. cit.*, p. 299.

[†] Hiller obtained negative results with bacteria washed in water, and hence we arrive at the law consistent to all organisms, that they live in a certain environment and perish in others, which are only slightly dissimilar. To substantiate this assertion, let me instance the action of the splenic-fever microbe upon the common fowl, where the successful inoculation depends upon a few degrees of temperature.

[‡] Aitken, *loc. cit.*, pp. 49, 50.

[#] *Ibid.*, p. 38.

[‖] *Ibid.*, pp. 49, 50.

[△] *Ibid.*, p. 39.

[◊] T. Lauder Brunton, "Pharmacology, Therapeutics, and Materia Medica," Philadelphia, 1885, p. 839.

We now approach the facts as regards the third division of the subject, and upon these I shall dwell very briefly, as they are to be more fully considered by one of the subsequent speakers.

It is known that puerperal fever is more liable to follow a tedious labor than one of average severity; an instrumental rather than a non-instrumental; that tedious labor is frequently accompanied by extensive laceration of the cervix uteri; that the external wounds are the ones which usually become the seat of diphtheritic deposits; that the so-called diphtheritic deposits of the higher genital tract are in reality superficial sloughs; that retention of a portion of the placenta is more likely to be followed by puerperal fever than is complete expulsion of that body; that the lying-in woman, through the condition of her pelvic organs subsequent to delivery, offers, so far as temperature, moisture, the presence of appropriate microbian pabulum, a suitable environment for the growth of the aerobic micro-organisms, and that the *débris* of the growth of the aerobic organisms is a suitable food for the anaerobic bacteria.

Finally, then, having gone over ground in a fragmentary manner which would require volumes to fully elaborate, I must say that the cause or causes of puerperal fever are unknown, and, as has been observed by Grandin, it is not scientific to dogmatize while our knowledge is in so chaotic a form. The one great fact, as has been observed by Pasteur, is the unfailing evidence of the existence of micro-organisms, or of the results of their action.

Having thus delivered my judicial opinion, it may not be taken as presumptuous if I declare it to be my own personal conviction that micro-organisms are one of the main factors in the causation of this disease. I do hold that the state of the puerperal woman as she comes to childbed is particularly hazardous. She offers an organism whose natural resources of defense are reduced in number and in strength; a circulation whose rapidity is lowered; an abundance of moisture; a propitious temperature; an exhausted mind and nervous system; a pelvic lymphatic system, laid open by lacerated wounds—a most fitting nidus for the indwelling of the chain-micrococcus; large blood-vessels peculiarly deprived of free oxygen, especially suited for the rapid advance of the anaerobic septic bacillus of septicæmia.

To me there is a clear mental picture of what I conceive to take place when a woman contracts puerperal fever. By reason of the above-mentioned condition of her blood and the character of her labor, she is especially prepared to receive into her genital apparatus† such microbes as may be conveyed to her upon the hands or instruments of her attendants. If, now, it be the septic bacillus, and the quantity large, and the inoculation direct into a blood-vessel, the result is a rapid fulminating case; it is a matter of a few hours. As you stand by the bedside of a woman thus inoculated, you may safely say that here is a direct inoculation of septic material, of a *contagium vivum;* that here the method of Semmelweiss* would have prevented the condition; here some one is guilty of manslaughter. Supposing, however, that the inoculation is done with the chain-micrococcus. After the stage of incubation, which is about three days, has passed, there appears usually upon the external genitals a diphtheritic patch, or perhaps there is no patch, but the lochia become ill-smelling. The micrococci, which now swarm in the discharges, having clustered themselves together in great masses and become attached to the mucous surface, thus largely constituting the said diphtheritic patches, begin, from dearth of food-supply, to advance along the lymphatics.† Their path of advance is not by the blood-vessels, simply because the number of red blood-corpuscles, the carriers of oxygen, is reduced; and, on the other hand, here abound the white blood-corpuscles, which, as Stermberg has pointed out, are the natural antagonists of the microbes. Nevertheless, the leucocytes, which constitute the police system of the organism, advance in vast numbers to repel the attacks of the invading microbes. Countless numbers of leucocytes and microbes are killed, their dead bodies constituting what is called pus. Finally, the leucocytes, by means of the half-dead bodies of their comrades, build up a rampart in the ends of the blood-vessels and lymph-channels.‡ The rest of the maternal organism is thus shut against the victorious host, and consequently its food-supply becomes limited. As the pabulum decreases, the adult microbes perish, but they are survived by innumerable spores. Should, now, the process cease, the woman has a slight chill and a few degrees of pyrexia—it is the "milk fever" of the third and fourth days. But now the septic vibrio finds the conditions of his existence. The spores of this bacillus, free oxygen being absent, begin to develop. This bacillus feeds upon the bodies of the dead microbe and the dead leucocyte alike. His carnage gives origin to gases of putrefaction, which, as their volume increases, seek an egress. Pressure is brought to bear upon the ramparts of the leucocytes, eventually a weak spot is found, the leucocytes are pushed to one side, and a host of microbes, which have been dormant but not dead, are hurled into the blood-channels and lymph-spaces. The white blood-corpuscles rally; they grasp in their amœboid embrace the advancing host. Each leucocyte is an officer of the law; he takes a microbe prisoner and hurries off to the nearest lockup. If now the arrest has been made in a lymph-channel, he takes his capture to the nearest police station, which is the nearest lymphatic gland or space; but if the seizure has been made in the blood-current, the urgency being great, the microbe is hustled off to the great court of justice of the human organism—which is the kidney. Here the microbe is deposited. The kidney cell, which is at once judge and executioner, passes sentence, and the micrococcus, or what remains of it, is transported out of the body-politic. The maternal organism has proceeded with her public offenders as England did a century ago. Still, at times, the number of criminals in the halls of justice is so great that a riot takes place. A number of officers and judges—leucocytes and kidney cells—"bite the dust," and we, observers, notice an albuminuria. Supposing, however, that the courageous leucocyte gets a hold on a septic bacillus, or rather a septic bacillus gets a hold on a leucocyte; the leucocyte makes an endeavor to reach the courts, but at some point in the journey the bacillus kills the leucocyte—*e. g.*, the officer is assassinated by his prisoner. A general fight takes place at this point between leucocytes and bacilli—the result eventually being a metastatic abscess. The bacilli again resort to their putrefactive gases—in other words, they use dynamite. The bacteria, by means of their atropine-like *débris* (alkaloids), paralyze the vaso-motor nerves. The blood-vessels become dilated. The circulation is slowed down. The police can not reach the central station with their captures. The septic bacilli and the microbes carry the day. The *friction* of the fight carries up the general temperature of the patient. A fatty degeneration of the tissue-cells of the body takes place. The battle closes with the patient's life.

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* E. L. Trousseart, "Microbes, Ferments, and Molds," New York, 1886, p. 119.

† Use of term according to Dr. John W. S. Gouley.

* Joseph Kucher, "Puerperal Convalescence," New York, 1886, p. 213 *et seq.*

† Note II.—Nor is the general course of that advance a hap-hazard chance, for the observations of König and Schlesinger prove that the course of pelvic inflammation is along the lines of least resistance, and Gordon's post-mortems would show that that side which had been more functionally active is most liable to become affected.

‡ Virchow has pointed out that a lymphatic thrombosis is a conservative process. William Leishman, "A System of Midwifery," Philadelphia, 1879, p. 676.

In every human organism the blood-vessels and lymph-channels constitute a great system of highways and byways. Along these crowded thoroughfares there whirl an innumerable host of red blood-corpuscles—the artisans of the body-politic. Meandering along down the sides of these "arteries of travel" stroll the leucocytes, officers of the law; like most policemen, proverbially slow-going, frequently coming to a stand-still when they are not hustled by the strong public opinion moving in the middle current. Nevertheless, they are the constituted protectors of the active little red blood-corpuscle. As they leisurely perambulate the wide avenues of the human republic they carefully examine every flaw in the perfect pavement, for by chance one of those general foes of the society, a micrococcus, may be attempting to push a way through or digging a pitfall to catch the foot of some unwary citizen. Should, however, the burly leucocyte find a septic bacillus, then he unearths a true anarchist. The result is a "Haymarket" riot.

Purpura Hæmorrhagica after a Mental Shock.—"Dr. Ed. de Smet, of Brussels," says the "Lancet," "has recently had a case of a young woman of a highly nervous temperament who, in consequence of a severe fright, experienced an eruption of purpura hæmorrhagica, though she had never had any eruption of the kind before. Some four months subsequently, however, in consequence of a fall, a similar eruption made its appearance. The treatment was directed mainly to the nervous system, which was evidently very much affected. Dr. de Smet refers to M. Lenoir, of Lille, who has published cases of various skin diseases—eczema, psoriasis, herpes, pemphigus, and vitiligo—which have followed a mental shock."

A NEW SUTURE-FASTENER FOR SILVER WIRE,

ESPECIALLY ADAPTED FOR OPERATIONS UPON THE CERVIX AND PERINÆUM.*

By AUGUSTIN H. GOELET, M. D.,
NEW YORK.

Those who have operated much for lacerated cervix, using the silver wire for suture, have experienced the great objection to its cutting into the tissues when twisted. If twisted tight enough for thorough coaptation, it is sure to cut deeply, and will be found buried out of sight when the sutures are removed. Sloughing or non-union is often the result, as the suture becomes loosened when the tissues give way, and this allows the margin of the wound to gape. The furrows left by the twisted sutures may be seen on the cervix years after the operation. But silver wire has held the preference over all other sutures for this location, because those which require tying are inconvenient of application. The catgut does not last, except for supplementary sutures, and silk is more apt to cut than silver wire.

Anything which will avoid the necessity of twisting the silver wire will, I feel sure, be appreciated. For this purpose I have devised this lead button-shield, which, when the wire has been well shouldered, is pushed down upon it tightly against the cervix, and clamped like a shot. (See Fig. 1.)

It has a smooth concave surface, with rounded edges, which may be molded to fit the side of any cervix, and from the middle of the outer or convex surface there is a projection resembling an oblong shot, through which there is a perforation for the wire. The wire should be well shouldered, either with the knot-tyer or the needle-holder, which has had a shallow groove made across the end to keep the wire from slipping off. When the knot-tyer is used, the ends of the wire must be crossed, which need not be done when the needle-holder is used. The shield may be clamped in position by the ordinary strong needle-forceps, and a multiplicity of instruments avoided.

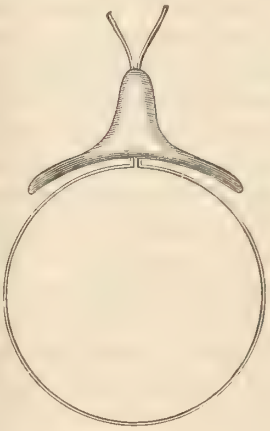

Fig. 1.

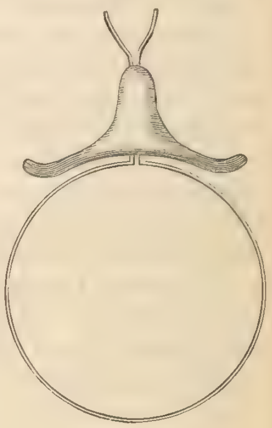

Fig. 2.

Usually two sutures, fastened in this way on each side of the cervix, are all that are necessary, even in very extensive lacerations, with an additional catgut suture on each side, near the os.

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* Read before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, April 26, 1888.

There is the same objection to silver wire when it is used for closing the external perineal wound. Although the skin is more able to resist than the mucous surface, great care is always necessary to avoid twisting the suture too tight, and, as an extra precaution, it is loosened afterward. When the tissues become swollen, it will cut some even then.

I have prevented this cutting and secured better results by using the same fastener as described above, with the ends of the shield surface turned up as shown in Fig. 2, to avoid digging into the flesh when the knees are brought together.

When silver wire is used for closing the abdominal wound after laparotomy the same fastener may be used with advantage if the shield surface is flattened out somewhat.

As a substitute for the lead button used to fasten deep sustaining sutures in large flap-operations where there is much strain on the line of union, I have had the shield surface made larger and curved up at the sides (something like a small Bozeman button), and the projection and perforation in the center, which avoids the necessity of using shot. (See Fig. 3.)

The advantages claimed for this fastener over the twisted suture are, viz.:

1. The rapidity of its application.
2. The support to the parts furnished by the concavity of the shield surface.
3. The wire will not cut and allow the sutures to loosen and the margins to gape.
4. The sutures are more easily removed because the wire will not be buried out of sight.
5. Fewer sutures are required.
6. It promotes more prompt union and better results.

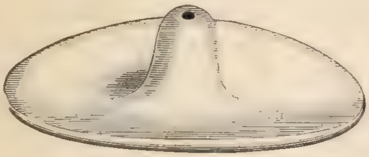

Fig. 3.

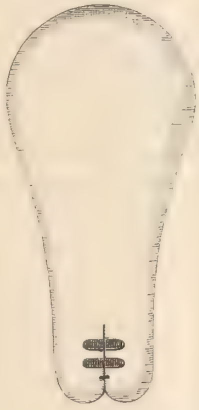

Fig. 4.

To remove these sutures the projection is seized with a pair of dressing forceps, slight traction made, and the scissors inserted under the shielding surface, and one side of the wire cut.

These buttons have been made for me very nicely by Mr. Philip H. Schmidt, the instrument-maker.

From the discussion which followed the reading of this paper, I fear I did not make one point quite clear and may be misunderstood; therefore I will add another illustration (Fig. 4) to show the position of the button-shield when in place. They are applied across the line of union of the two denuded surfaces on each side of the cervix, the concavity of the shield fitting the convexity of the side of the cervix, and when pushed down in place, while the projection is in the grasp of a pair of strong needle forceps, it is compressed like a shot, and the ends of the wire cut off close to the lead projection.

The claims of advantage for this fastener, as set forth above, have certainly not been exaggerated. I have used it as well as the twisted suture long enough to be sure that it is a decided improvement over the twisted suture, although it may not be (as was claimed by some present) an actual necessity. It might likewise be claimed that the electric light and telephone are not actual necessities; still this is no argument that they are not decided improvements upon gas and the telegraph.

I assert that the silver wire when twisted will cut more or less when the tissues become swollen, as they do after these operations, and that the use of this shield will prevent it. Let him who doubts the truth of this assertion try it for himself.

243 West Fifty-fourth Street.

SHOULDER AND OTHER MORE TRANSVERSE PRESENTATIONS.

By EDWIN R. MAXSON, A. M., M. D., LL. D.,
SYRACUSE, N. Y.

Having published, during the past thirty years, in various medical journals, my discovery of the availability of the genu-pectoral position for producing cephalic version in shoulder and other more transverse presentations, and having read a paper before the Syracuse Medical Association in 1877 advocating it, as well as having in 1867 presented my essay as delegate to the International Medical Congress in Paris on this subject—the former having been published in the "American Practitioner," and my method heartily indorsed by the late Sir James Y. Simpson, Professor S. D. Gross, Professor Parvin, Dr. Edward Warren Bey, and others of high standing in this country and abroad—it was not a little surprising, when dissection in a case of shoulder presentation was reported in a learned medical association recently, calling up a discussion of the subject, that so much doubt was expressed as to the availability of this posture in such cases, none of the speakers, as appears, having tried it, and the reporter not having heard of it, as was stated.

Passing over many successful cases that have been reported in this country and abroad, I again attempt to call attention to this subject by abstracts from an essay of Dr. H. M. Cutts, of Washington, D. C., read before the Washington Obstetrical and Gynæcological Society, and published in the "American Journal of Obstetrics" of November, 1887, to which reference is here had.

After referring to Deventer, Smellie, Bard, and Shippen, as having advocated this position, "to favor podalic version," he says: "On the other hand, Dr. Maxson recommends it for cephalic version, so to him is due the discovery of this more desirable possibility."

Dr. Cutts then gives my rules for having the patient kneel in the middle of the bed upon folded quilts, eighteen inches high, the face being brought down forward on to a pillow, so as to bring the back inclining downward at an angle of about 45 degrees, the attendant then placing himself or herself on the side opposite that to which the head is lying, and gently pressing the shoulder back, if it is not receding by gravity alone, extending the fingers so as to grasp the head and guide it to the superior strait, manipulating externally with the other hand, then turning the woman down upon the opposite side, and steadying the head till one or two pains may cause it to engage, when the presentation becomes normal.

These rules I laid down at length in the essay I read before the Syracuse Medical Association, February 6, 1877, which was published in the "American Practitioner" of March, 1877, to which he refers, that being the last of a series of articles I have published in various medical journals since 1860, advocating the genu-pectoral position for cephalic version.

Dr. Cutts offers the following helps secured by this position:

1. "The downward pressure of the atmosphere upon the fundus uteri is, at least in part, equalized by the admission of air into the vagina."

2. "We have the force of gravity to aid us. The weight of the child naturally drags the presenting part from the os uteri and pelvic cavity, and by so much relieves the impaction" (Hildreth, "Am. Jour. of the Med. Sciences," April, 1876).

3. "The abdominal cavity is elongated, putting the vagina upon the stretch, thereby giving it a cylindrical character, thus aiding to throw the head into line with the superior strait" (Maxson, "Am. Prac.," March, 1877).

4. "The woman can not in this position, to any extent, exert her voluntary muscles in bearing down" (Hildreth).

5. "We get rid in a great measure of the superimposed weight of the abdominal viscera and the resistance offered by the promontory of the sacrum, should any part of the child be impacted below it" (*ibid.*).

6. "The liquor amnii is much more likely to be retained until the version" (*ibid.*).

7. "The uterus, with its contents, recedes from the spine, and by force of gravity tends to relax the abdominal muscles, and hence favors our manipulations" (*ibid.*).

8. "It is more than probable that in this position the uterus will be found physiologically to contract less violently and relax more readily than when the patient is on the back or side" (*ibid.*).

Dr. Cutts then proceeds to give in detail seventeen cases to illustrate the success of this posture in difficult version, "bringing out especially (1) why version was necessary; (2) what was tried before the genu-pectoral position; (3) the condition of the membranes; (4) the presentation of the fœtus after the genu-pectoral position; (5) the termination of labor."

Dr. Cutts then details the seventeen cases reported in different medical journals by Smellie, Maxson, Hildreth, Hadden, Bigham, Lueck, Parvin, Linton, Huestes, Perkins, Fowler, and others, and, in conclusion, says: "It will be seen that what Maxson calls the posture treatment has made easy an operation that, in certain presentations, is always difficult and sometimes impossible, and that it has avoided the hideous operation of embryotomy, which, barring an occasional spontaneous version, would have in many instances been the only alternative under the circumstances. It will also be seen that in all the cases a transverse presentation made version necessary, that in many of them other methods had failed, that in a large majority of cases the membranes were ruptured before version was undertaken, that cephalic and podalic version were accomplished about equally, and that in every case, except one unknown,* the labor and puerperium terminated without complications to the mother. In four cases the child was born dead, but in no instance was this the fault of the posture; in two cases the position failed to bring relief. In none of these cases has the use of antiseptics been mentioned."

Dr. Cutts then says:

"I think we may conclude, therefore, that, in transverse presentations at least, the genu-pectoral position is an invaluable adjunct to the safety of both mother and child; that version with it may be undertaken any time after the complete dilatation of the os, and without regard as to whether the membranes are ruptured or not, and without waiting for an anæsthetic. The only thing we have to consider is whether we shall do cephalic or podalic version. This choice," he says, "depends so much upon the individual case, and opens up a subject outside of the paper's intent, that I shall not allude to it further." He adds: "It would seem, also, that combined manipulation is not always necessary, for in several instances Nature brought the head into the inlet."

Dr. Cutts concludes as follows:

"I have been surprised to find how little is said of the genu-pectoral posture in regard to obstetrical uses. Except to mention it in speaking of prolapsed funis, I can find nothing about it in the modern text-books on obstetrics. The journal literature, also, contains a wonderful dearth of reported cases, from which I take it the method has not often been tried. The 'boom' given it by Maxson was short-lived, and thus, in my opinion, a valuable expedient has been relegated to desuetude" ("American Journal of Obstetrics" of November, 1887, pp. 1173–1180).

I notice also in the same journal, at pages 1204–1207, that Dr. Fry, in opening the discussion in the Obstetrical and Gynæcological Society, premised by saying "he thought Dr. Cutts's paper one of the most important that had ever been read before the society."

I present this sketch and abstract of Dr. Cutts's paper as a justification of what I have stated and published on the availability of the genu-pectoral posture for producing cephalic version in all shoulder and more transverse presentations, and hoping that it may call attention to this easy, safe, and humane method for both mother and child.

208 Madison Street, Syracuse, N. Y., *April, 1888.*

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* The pains ceased, and another physician had the case.

A CASE OF CYST OF THE PANCREAS.*

By J. A. NICHOLS, M.D.,
PLATTSBURG, N. Y.

This case of cyst of the pancreas is presented to you principally on account of its interest as an extremely rare affection and of its difficulty of diagnosis.

In searching the literature on the subject I have found but eleven cases recorded, none of which were correctly diagnosticated before an exploratory incision had been made, but were mistaken for either echinococcus cysts of the liver or, in most of the cases, ovarian cysts. All of the cases but one were operated upon either by extirpation of the cyst or evacuation and drainage. Five of the cases operated upon resulted in recovery, while five died from peritonitis.

A word as to its ætiology. Pancreatic cyst may be occasioned by any cause which obstructs the common duct or any of its branches, as by the impaction of calculi, partial or complete obstruction by cicatricial contraction, or a sudden or gradual obstruction of the duct without diminution of its lumen by displacement of the pancreas. Thus the pancreatic juice, obstructed in its flow, dams back, distends the ducts, causing a degeneration and absorption of the parenchyma of the gland, leaving the distended capsule to form the cyst wall.

The case which I have to report was that of a male, aged forty-nine, American, who, twelve years prior to his death, first complained of very severe pains in the epigastrium attended with a feeling of fullness in that region, but having no nausea or dyspepsia. These symptoms would continue with more or less severity for a week or so, and then disappear, returning at intervals of two or three months. These periodical pains were preceded by a rather peculiar premonitory symptom, which I will not endeavor to explain, of a most intense itching of both feet, which subsided on the advent of the pain. His appetite during the most of the time was voracious and never poor; any food ingested caused him no disturbance. The patient's condition remained apparently unchanged for about seven years, when he consulted his family physician for excruciating pains he was having in his right arm and forearm, said at the time to be rheumatic. The pains were not constant, but continued, attended with atrophy of the muscles, although he had the use and control of the member. During the same year he had a circumscribed peritonitis, after which, until his death, he had periods of vomiting the peculiar coffee-ground material so common in malignant disease of the stomach.

Three years prior to death the first evidence of any tumor of the abdominal cavity was discovered. He was seen by some of the most eminent men in the profession, but all alike failed to make a diagnosis. He refused to allow an exploratory incision or aspiration to be made. At about the time of the discovery of the tumor, symptoms of diabetes presented themselves, and large quantities of sugar were found in the urine. He became greatly emaciated, although his appetite and digestive powers remained fairly good and his bowels regular, and he finally died, February 27, 1887, of asthenia.

At the necropsy the following day a cyst was found, holding about four quarts of serous fluid, occupying a large portion of the abdominal cavity, bound down by adhesions at various points. No trace of the glandular structure could be found.

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* Read before the Clinical Society of the New York Post-graduate Medical School and Hospital, April 21, 1888.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MAY 26, 1888.

A WORD ABOUT SLEEPLESSNESS.

Disorders of sleep may be said to predominate over all other complaints that more or less painful maladies wring from suffering humanity. "If he sleep, he shall do well," says the sacred chronicle. It holds true to-day and for all time. Freedom from pain, and sound, unbroken slumber, are the most reliable signs of health, that condition of well-being which makes well-doing possible. Whatever murders sleep has a far more widely reaching influence than simply the loss of one or many a night's rest. In view of insomnia's destructive power, any agent to arrest its ravages deserves both gratitude and praise.

In the "Practitioner" for March, 1888, there is an interesting paper on the "Treatment of Sleeplessness" by A. Symons Eccles. The author finds restless sleep and "constant dreaming" associated with dyspeptic or gouty symptoms; and in patients suffering from chronic joint affections and sciatica, in which the local pain has not been sufficiently severe to inhibit sleep altogether. A hot bath, he affirms, has been found most valuable in producing a dreamless sleep, although not usually of longer duration than four hours without intermission, and sometimes followed by a period of great wakefulness, relieved only by a short morning doze. Even when this somewhat uncomfortable vigil supervenes, the patient always feels more refreshed and happier the next day than after a long night of uneasy, dreaming sleep. Minute directions in regard to this bath are given. The temperature of the bath-room should be not less than 65° F., which the steam raises to 70° F. The patient should lean, entirely nude, over the edge of the tub or supported on a chair, and have *the head and face rapidly douched with water at 100° F.* The exposure of the rest of the body-surface to the air will cause a short contraction of the cutaneous vessels and an appreciable cooling of the surface, which may be verified by Immisch's metallic thermometer. This cooling of the body-surface, coupled with the application of the hot sponge to the head, leads to a determination of blood to the head, or, in other words, to a dilatation of the vessels of the brain, the patient's temporal pulse being accelerated and a sense of fullness in the head experienced. The whole body, excluding only the head and face, is then immersed in the bath at 98° F., rapidly raised to 105° to 110° F. When a sensation of pleasant languor is felt, the pulse, at first accelerated, has fallen to a slow, full, steady, and easily compressible beat. The time necessary to bring this about varies from eight to fifteen minutes. Then the patient must be slowly raised, wrapped in warm blankets, and put to bed without haste or personal effort. By the time the bedroom is reached the moisture on the surface of the body will have been absorbed. Having donned his night-clothes, the newly bathed wraps the drapery of his couch about him and lays him down to pleasant dreams, with a hot bottle to his feet, and minus any noise or any light, save the feeble glimmer that reassures the timid. A good night usually follows, sleep supervening within a few minutes after entrance into bed.

The theory on which these proceedings are based is, that first, by the exposure to the air of the suddenly unclothed body, a contraction of a large vascular area is produced, leading to a corresponding dilatation of the vessels of internal organs, which in the case of the brain is further induced by the application of the hot sponging and posture. This provides a thorough filling of all the cerebral vessels. By immersing the body, except the head, the vessels of the abdomen, trunk, and extremities, and especially those of the surface, are dilated. Contraction of the arterioles of the brain occurs, which, with the gradual slowing of the heart's beat, reduces the supply of blood *to the whole of the brain*, thus decreasing its functional activity equally throughout, and so placing it in the most favorable condition for complete functional rest. There are circumstances that contra-indicate this method, such as extreme anæmia, emaciation, the presence of aortic valvular disease, or signs of atheroma. A stimulant rather than a depressant action on the nervous system is required in such cases. Just here massage possesses unusual virtue.

Insomnia depending upon an overwrought and enfeebled nervous system is often accompanied by hyperæsthesia of sufficient degree to cause the patient to resist, to become more or less rigid under massage. In this event, gentle stroking of the back and limbs, thorough chafing of the feet with firm upward friction until the local temperature is raised to 97° F., together with the application of a hot compress over the abdomen, have proved effective and highly beneficial measures. The hot bath, the hot abdominal compress, with or without previous kneading of the abdomen, or the whole wet pack modified to suit the requirements of the case, and all of these followed by the most rigid observance of the recumbent position in a warm bed in a quiet, cool, well-ventilated room, where the senses can become dormant through absence of stimulation—these have been found valuable aids to sleep when disorders of this function are not dependent upon fever or intense pain. Even in sciatic and trigeminal neuralgias the wet pack has been employed with advantage.

To effect permanent restoration of refreshing sleep, the tiresome old vault of heaven must be broken up into new forms. The brain, when overworked, must lie fallow. The stomach, that too often suffers with the other organs of digestion from the most extraordinary maltreatment, must be coaxed into a regular performance of its duties. The muscular system, wasted and inert, perhaps, from disuse, must be called upon to fulfill its digestive and excrementitious functions, too long held in abeyance. The question of overcoming insomnia is not one of taking something, but of doing something. Mechanical disturbances must be overcome. Everything wrong, it has been stated, is primarily an error in mechanics. What must I do to go to sleep? It is the province of the wise physician to give reply. Valuable hypnotic agents exist outside of narcotics. These are to be selected with care and discretion for the relief of suffering humanity, that to soft sleep it may give itself away,

"And in a dream, as in a fairy bark,
Drift on and through the enchanted dark
To purple daybreak."

A RADICAL CHANGE NEEDED.

NOTHING, perhaps, in sanitary science is better established than the danger to be apprehended from the processes of fermentation and putrefaction. It being certain that all decomposition is the result of, or at least is attended by, the rapid multiplication and great activity of micro-organisms, that some of these organisms or their products are injurious to the health of higher animals, and that it is at present impossible to discriminate between those that are harmless and those that are not, it is evidently the part of prudence to remove all organic refuse matter as rapidly as it accumulates and before decomposition sets in.

Acting upon this conviction, boards of health have devoted a considerable share of their energies to the prompt removal of such refuse from houses. Pipes and traps, water-closets with nicely adjusted flushing apparatus, sinks and slop-basins of impermeable material, and metallic garbage-cans, have been forced into use, and old vaults, ash-pits, and cess-pools abolished under constant pressure, in the firm belief that these improvements would be warranted by results, and they have been.

In disposing of the refuse of our stables, however, our methods are still primitive, in city or country. Manure is allowed to accumulate and rot until there is no more room for it, or it suits somebody's convenience to take it away. It seems to be dealt with as if it were a harmless product. In fact, there is yet among the laity a wide-spread belief that the air of stables is wholesome and particularly conducive to the well-being of persons afflicted with diseases of the lungs. There is certainly no general conviction that stables ought to be kept as clean, as promptly, frequently, and thoroughly disinfected and rid of all refuse, as human dwellings. The few facts that have been collected show the danger of the accumulation of manure. A recent order of our city Board of Health compels, in most cases, the retention of manure inside the stable, and the epidemic of spinal meningitis among horses during the past winter is by many veterinarians attributed to the pollution of the atmosphere in this way. Why, then, is not the manure removed more promptly?

The chief difficulty seems to be that the matter is left entirely to private enterprise. The contractors, undertaking it as a matter of personal profit, find it to their interest to remove the manure at their own convenience. There are times when the demand for it is light, when its collection is difficult and expensive, when (as at present) strikes and boycotts interfere with the work, and when conflicts with the public authorities and private health associations render the contractors cross-grained and indisposed to accommodate the public. Our Board of Health forbids the use of manure-vaults outside of the stable, and the accumulation of more than a cart-load of manure on the premises before removal, but it has no power to compel the private contractor to remove these small accumulations, and can only harass the individual owner and keep him in a most uncomfortable state of perplexity. Many physicians have been annoyed in this way during the year, and there seems to be no prospect of relief.

Why, then, should not the removal of stable manure devolve upon the public authorities as does the removal of all other kinds of refuse? Why make an exception in this? If it were put in charge of the Department of Street-cleaning, it would probably be done with considerable regularity, and the whole vexatious question would be settled. It would undoubtedly be a source of profit to the city, and relieve, instead of increasing, the burdens of the tax-payer. The matter is one that concerns the health as well as the comfort of every inhabitant of this great city, and we urge its careful consideration upon the public authorities as one of great economical, administrative, and sanitary importance.

MINOR PARAGRAPHS.

MEDICAL PUBLICATIONS OF HARVARD MEDICAL SCHOOL.

We have received a neatly bound volume containing reprints, in their original form, of articles written by instructors in Harvard Medical School. It is stated in the preface that the articles are presented in bound form to show the character of the original work done by the instructors, or under their personal supervision, during the year 1887, and that a portion only of the year's work is thus represented. The papers are all of scientific value, and the absence of clinical papers makes the collection a desirable one. The following is the Table of Contents: "The Action of Sulphuric Ether on the Peripheral Nervous System," by Dr. H. P. Bowditch; "The Anatomy and Physiology of the Recurrent Laryngeal Nerves," by Dr. F. H. Hooper; "The Effect of Pure Alcohol on the Reaction Time, with a Description of a New Chronoscope," by Dr. J. W. Warren; "Notes on Muscular Abnormalities," and "The Range of Variation of the Human Shoulder Blade," by Dr. Thomas Dwight; "The Process of Repair after Resection of the Intestine," by Dr. J. C. Warren; "The Experimental Value of the Dowse Splint," by Dr. E. G. Brackett; "Fracture of the Spine: its Immediate Treatment by Rectification of the Deformity and Fixation by Plaster-of-Paris Jacket," by Dr. H. L. Burrell; "The Artificial Feeding of Infants," by Dr. T. M. Rotch; "An Experimental Research upon Rabies," by Dr. H. C. Ernst.

THE EFFECT OF TEA UPON THE TEETH.

A writer in the "British Medical Journal" states that in the district in which he resides about 2,000 persons who are employed in cotton factories are in the habit of drinking strong tea to excess, and that "they, almost without exception, have bad teeth"; that many of them lose their teeth at puberty, and that the disease, "whatever be its cause," seems to be hereditary, children during the teething period often losing their first teeth before the time for the eruption of the permanent set. He states that decay begins in or near the roots and that it bears no resemblance to specific disease—syphilis being an almost unknown disease in the district. He evidently entertains the opinion that tea is the direct cause of the decay of the teeth. Another writer in the same journal says that "excessive tea drinking," in so far as it vitiates the secretions of the mouth, thereby favoring the development of acids or micro-organisms, which, being deposited on teeth that are structurally defective in enamel or dentine, cause decay, may "be looked upon as a remote cause of dental disease."

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 22, 1888:

DISEASES.	Week ending May 15.		Week ending May 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	3	3	5	4
Scarlet fever	186	35	164	30
Cerebro-spinal meningitis	3	3	6	5
Measles	169	11	206	7
Diphtheria	193	52	193	56
Small-pox	20	6	12	7

The Health of New York City.—During the four weeks ending Tuesday, May 22d, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhus, 1 case; typhoid fever, 31 cases and 17 deaths; scarlet fever, 772 cases and 135 deaths; cerebro-spinal meningitis, 20 cases and 21 deaths; measles, 602 cases and 34 deaths; diphtheria, 734 cases and 213 deaths; small-pox, 66 cases and 24 deaths.

The New York Dermatological Society.—At the annual meeting, held on Tuesday, the 22d inst., the following officers were elected for the ensuing year: President, Dr. E. L. Keyes secretary and treasurer, Dr. George T. Elliot; members of the Executive Committee, Dr. R. W. Taylor, Dr. George H. Fox, and Dr. E. B. Bronson.

The Hospital Graduates' Club gave its third annual dinner on Thursday, the 17th inst. An address was delivered by Dr. J. S. Hawley, whose theme was the prevailing tendency to seek foreign instruction and to read foreign medical literature. The club is composed of some of the younger medical men, and its membership is limited to twenty-five, a full term of service on the resident staff of a hospital being a prerequisite to admission. The officers for the ensuing year are Dr. A. B. Townshend, president; Dr. N. H. Henry, vice-president; and Dr. J. E. Newcomb, secretary.

Harvard Medical School.—Dr. F. C. Shattuck has been appointed to the Jackson professorship of clinical medicine. Dr. E. N. Whittier, assistant professor of clinical medicine, has resigned. Dr. Whittier has been connected with the school for sixteen years, having formerly been assistant to the late Dr. Calvin Ellis. Since the resignation of Dr. R. T. Edes he has had charge of the teaching of clinical medicine which duty he has performed with credit to himself and benefit to the students.

The late Dr. Loring.—At a meeting of the Practitioners' Society of New York, held on Friday, the 4th inst., the following resolution was adopted:

Resolved, That in the death of Dr. Edward Greely Loring the society has lost an eminent colleague whose contributions to its scientific work were characterized by distinguished ability, whose agreeable companionship contributed largely to the enjoyment of the scientific entertainments of the society, and whose absence will long be felt and lamented.

[Signed.]
Samuel Sexton, M. D.,
Robert F. Weir, M. D., } *Committee.*
James B. Hunter, M. D.,

Back Numbers wanted.—Any subscriber to this Journal who has copies of the issues for December 15, 1883, and December 13, 1884, which he does not care to retain, will confer a great favor if he will send them to the office of the Journal, No. 3 Bond Street, New York.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 19, 1888:*

Kershner, Edward, Surgeon. Detached from the U. S. steamer Pensacola, and to wait orders.

Sayre, J. S., Assistant Surgeon. Detached from the U. S. steamer Pensacola, and to wait orders.

Jones, W. H., Surgeon. Detached from the Navy-Yard, League Island, and ordered to the Pensacola.

Cooke, G. H., Surgeon. Ordered to the Navy-Yard, League Island.

Crawford, Millard H., Passed Assistant Surgeon. Ordered to the Vandalia.

Wieber, F. W. F., Assistant Surgeon. Detached from the Vandalia and ordered home.

Stone, E. P., Assistant Surgeon. Ordered from the Naval Hospital, New York, to the Pensacola.

Harmon, G. E. H., Passed Assistant Surgeon. Commissioned a Surgeon, May 12th.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 13 to May 19, 1888:*

Town, F. L., Major and Surgeon, Post Surgeon at the Post of San Antonio, Texas, will take charge of the office of the Medical Director at these headquarters, and perform the duties of that officer during his absence on leave. S. O. 51, Department of Texas, May 11, 1888.

Appel, D. M., Captain and Assistant Surgeon, will be relieved from duty at Fort Davis upon the arrival of Captain J. V. Lauderdale, Assistant Surgeon, and proceed to Fort Hancock and report to the commanding officer of that post for duty. S. O. 49, Department of Texas, May 5, 1888, and S. O. 50, Department of Texas, May 9, 1888.

Edie, Guy L., First Lieutenant and Assistant Surgeon, will proceed, not later than the 25th inst., to Fort Concho, and report to the commanding officer, 8th Cavalry, for duty as medical officer, in compliance with Par. 13, S. O. 99, c. s., Headquarters of the Army. S. O. 49, Department of Texas, May 5, 1888, and S. O. 50, Department of Texas, May 9, 1888.

Wood, Leonard, First Lieutenant and Assistant Surgeon. Leave of absence extended two months. S. O. 114, A. G. O., May 17, 1888.

Par. 12, S. O. 49, Department of Texas, May 5th, relative to Harris, H. S. T., First Lieutenant and Assistant Surgeon, accompanying 8th Cavalry to Department of Dakota, is amended by Par. 1, S. O. 50, Department of Texas, May 9, 1888.

Par. 1, S. O. 50, Department of Texas, May 9th, is revoked by Par. 1, S. O. 51, Department of Texas, May 11, 1888.

Par. 15, S. O. 49, Department of Texas, c. s., relative to Clendenin, Paul, First Lieutenant and Assistant Surgeon, accompanying 16th Infantry to its destination, is revoked by S. O. 51, Department of Texas, May 11, 1888.

Harris, H. S. T., First Lieutenant and Assistant Surgeon, will be relieved from duty at Camp Peña Colorada, and proceed to San Antonio, where he will report to commanding officer, battalion 16th Infantry, for duty as medical officer with that battalion to its destination in the Department of the Platte. Upon completion of this duty, he will return to his proper station, Camp Peña Colorada, Texas. S. O. 51, Department of Texas, May 11, 1888.

Clendenin, Paul, First Lieutenant and Assistant Surgeon, will proceed from Fort McIntosh to Fort Davis, and report to commanding officer, 8th Cavalry, for duty as medical officer with that regiment on its march to Fort Concho, from which place Lieutenant Clendenin will return to his proper station. S. O. 51, Department of Texas, May 11, 1888.

Walker, F. V., First Lieutenant and Assistant Surgeon, will be relieved from duty at Fort Ringgold, and proceed with Co. D, 16th Infantry, to San Antonio; he will then report for duty to commanding officer, Post of San Antonio. S. O. 49, Department of Texas, May 5, 1888.

Society Meetings for the Coming Week:

Tuesday, *May 29th:* Boston Society of Medical Sciences (private); Medical Societies of the Counties of Queens (annual—Mineola) and Rockland (annual), N. Y.

Wednesday, *May 30th:* Medical Society of the State of West Virginia (Charleston); Auburn, N. Y., City Medical Association; Medical Society of the County of Monroe (annual—Rochester), N. Y.; Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *May 31st:* Cumberland, Me., County Medical Society (Portland).

Friday, *June 1st:* Practitioners' Society of New York (private); Baltimore, Md., Clinical Society.

Saturday, *June 2d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

SOME POINTS IN THE PHYSIOLOGY AND SURGERY OF THE ANCIENTS.

Kiowa, Kansas, *April 2, 1888.*

To the Editor of the New York Medical Journal:

Sir: In a recent communication I endeavored to show that the ancients understood, as we do now, that the arteries contained "pure blood and spirit"—that they knew the effect if they were cut. Indeed, they ligated them, which is proved by the method of Celsus for arresting hæmorrhage. He says: "*Quod si illa quoque profluvio vincuntur,* venæ *quæ sanguinem fundunt, apprehendæ, circarque id quod ictum est, duobis locis deligandae, intercidendæque sunt.*" If we once admit that they knew the contents of the arteries and the result when opened, we are forced to concede that they knew the direction of the blood's current. But in the foregoing quotation it will be observed that the word "venæ" and not "arteriæ" is used. By comparing the following quotations, however, it will be understood that they did not apply the words venæ and *φλέβες* as we do now: "*ἥ καρδίη καὶ αἱ κοῖλαι φλέβες κινέονται αἰεὶ.*"—Hip. de principiis, cap. vii.

"*Quas venas autem conspectus medici movet, quam facile mille res turbant! . . . Ac protinus quidem scire, non febrici-*

tare eum, cujus venæ naturaliter ordinatæ sunt."—Celsus, lib. iii, cap. vi. "*Tum requirunt etiam, quare venæ nostræ, modo submittant se, modo attollant.*"—Cel. Proœmium. "*Arteriarum pulsus in cacumine maxime membrorum evidens, index fere morborum, in modulos certos legesque metricas per ætates—stabilis aut citatus aut tardus—descriptus ab Herophilo medicinæ vate meranda arte.*"—C. Plin., lib. xi.

"*Alia, si sanguinis in eas venas, quæ spiritui accommodatæ sunt, transfunditur.*"—Cel. Proœmium. I have quoted Pliny to show that the words arteria and vena were applied to exactly the same thing, and, whether a fault of transcribers of the original manuscripts or not, this use of the words compels us to judge from the sense of the context which may be meant, an artery or a vein, according to the modern acceptation of the words.

If we grant, which we must do, that they knew the contents of the arteries and the direction of the blood's current in them, it naturally leads us to consider whether the course of the blood in what we now term veins could have escaped their notice. Were they men so deficient in ordinary observation as an affirmative answer to this question would imply? When we consider that the origin of our planet, nearly as geologists teach at the present time, is clearly explained by Hippocrates in the following passage: "Κυκλεομενῶν δὲ τουτέων ὁτὲ οὖν ἐταράχθη, απεκλέισθη τοῦ θερμοῦ πουλὺ ἐν τῇ γῇ ἄλλοθι· τὰ μὲν μεγάλα, τὰ δὲ ἔλαστω τὰ δὲ καὶ πάνυ σμικρὰ, τὰ δὲ ὦλῆθος πολλά. Καὶ τῷ χρόνῳ ὑπὸ τοῦ θερμοῦ ξηραινόμενης τῆς γῆς, ταῦτα καταληφθέντα περὶ αὐτὰ σηπεδόνας ποιέει, οἷον περὶ χιτῶνας"—ʽΙΠΠΟΚ ΠΕΡΙ ʼΑΡΧΩΝ—and that this explanation was made only for illustration, and therefore was considered to be well understood by others of his time, we are forced to acknowledge that they were men not only of ordinary but of extraordinary perceptive faculties, even if there were no other evidence than this one passage. It is, therefore, hardly necessary to refer to his experiment of giving water colored blue to a thirsty animal and while drinking cutting its throat, whereby he demonstrates with what accuracy the epiglottis performs its work, or to his experiment of watching the development of the chick (*vide* "Hip. de corde," cap. ii, "De natura pueri," cap. xxxvi), or to numerous other passages, which prove that they were men of, at least, ordinary observation. What, then, did they know of the blood's current in those vessels in modern phraseology termed veins? If we turn to either Celsus or Hippocrates "De fracturis," we shall there find displayed not only an intimate knowledge of the circulation of the blood, but also of the results to be obtained by steady and uniformly increasing pressure upon a given limb. The principal obstacles to the successful reduction of a fracture and the maintenance of exact apposition are two in number—viz., the mass of flesh over the fracture whereby we are prevented from feeling "with our own fingers" whether the bone is exactly in its proper place, and the natural contraction of the muscles, the stay which the bone afforded having been removed.

These impediments were overcome by the ancients in the following manner: The limb was extended and reduction effected nearly as at the present time. Then, supposing it to be a break between the wrist and elbow, the initial of a bandage was carried twice or thrice around the limb at the point of lesion and terminated above near the elbow. Another, commencing at the same point, was carried downward to the hand, thence backward to end with the first. This process was repeated until sufficient had been used for the object desired. The pressure of these bandages was always *greatest* over the point of fracture and gradually became less toward the hand and elbow, and the bandages were removed from time to time and again applied with gradually increased pressure, but always most constricted at the point of fracture, by which means, Hippocrates says, ἐξαρύαται εκ τούτου οἱ ἰχῶρες ἐς τὰς ἐσχατιὰς ἔνθα καὶ ἔνθα. The arm was flexed, the thumb uppermost, and splints were applied to retain the bones in place in precisely the same way as at the present. But as a result of the pressure he further says: "τῇ δὲ ὑστεραίη οἰδημάτιον ἐλθεῖν ἐς χεῖρα ἄκρην μαλθακόν." This swelling, οἴδημα, of the hand was carefully watched and the pressure regulated thereby, so that σφάκελος, or mortification, of the hand should not occur. At the end of seven days by this method the muscles and tissue near the fracture were so attenuated that the obstacles to the successful treatment of the fracture were removed. The fragments, if not already so, were then placed in *exact* apposition for "τὰ ὀστέα τὰ κατεηγότα ἐπὶ μᾶλλον κινεύμενα καὶ εὐπαράγωγα ἐς κατόρθωσιν."

From this treatment we learn that the principle of the Esmarch bandage is nothing new. If more proof is needed as to their knowledge of the blood's circulation in the limbs, we have it in Celsus, lib. iv, cap. xi. He says: "*Erasistratus,*" for hæmorrhage from the lungs, "*horum crura quoque et femora brachiaque pluribus locis deligabat,*" and that, "*id sæpe commode respondere experimenta testantur. Neque tamen pluribus locis deligare necesse est: sed satis est infra inguina et super talos, summosque humeros, etiam brachia.*"

Heretofore I have endeavored to prove that they were men of at least ordinary powers of observation and intelligence. If further proof were necessary, I might refer to Pliny, lib. xi, who remarks that the heart of man increases in weight annually until the age of fifty, thence decreases until one hundred years, and that the Egyptians, who were accustomed to embalm their dead, estimated that a man could not live more than one hundred years by reason of this defect in the heart.

The ancients bled from the arm, the leg, and other points, and I submit that it is an absurdity to suppose that men of ordinary intelligence could have practiced this "lost art" without discovering the course of the blood in the veins, for whoever attempts to perform phlebotomy will find the operation much facilitated if he places a ligature between the point of incision and the body, thereby preventing the blood's onward course to the heart and causing a steady flow of blood from the wound which usually stops the moment the ligature is removed. Hippocrates, *de morbo sacro*, explains that spirit which has been distributed to other parts of the body returns with impurities from flesh and blood (CO_2?), and is therefore wholly unfitted for the brain's use.

In other places he gives us clearly to understand that the blood is purified by respiration. If, however, we still doubt them to have had a knowledge of the circulation of the blood, what shall we say to this passage—περὶ φλεβῶν.

αἱ φλέβες διὰ τοῦ σώματος κεχυμέναι πνεῦμα, καὶ ῥεῦμα, καὶ κίνησιν παρέχονται, ἀπὸ μιῆς πολλαὶ διαβλαστάνουσαι. Καὶ αὕτη μὲν ἡ μία, ὅθεν ἤρκται, καὶ ἡ τετελεύτηκεν οὐκ οἶδα. Κύκλου γὰρ γεγεννημένου, ἀρχὴ οὐχ εὑρέθη. The word "ῥεῦμα" here means a constant flowing or changing, and the word φλέβες includes those vessels we now term veins and arteries.

It is perhaps a misfortune that the inclinations of those teaching the Greek and Latin impel them to use only historical or poetical works rather than those in which may be found the knowledge of the past. Man is fond of reading of destruction, and pays far more honor to Cæsar, who slaughtered millions, than to Jenner, who, by a life of quiet industry, has saved millions, and will save millions yet unborn, from death in its most hideous form. General Stark is remembered and honored to-day by the people of New Hampshire. Dr. Dixi Crosby, who by his discovery of an easy and practical method of reducing dislocations of the finger joints bestowed a never-ending benefit upon the human race, is probably, by these same people, nearly or quite forgotten. Of these causes, the former renders even those having a classical education ignorant of ancient science; the latter tends to bury all knowledge, both ancient and modern, in the dunghill of man's folly.

If we turn from the old to the new, from ancient medical works to the modern, what a change! In the first we have been reading of *φλέγμα, αἷμα, χολή, καὶ ὕδρωψ* as the causes of disease. In the second we learn that the cause of infectious pneumonia is "pneumococcus, or ptomaine, or what not"; yesterday it was all cellular pathology, to-day pneumococcus, but to-morrow it will be "what not," and we naturally felicitate ourselves and assure the layman of our profound knowledge.

For my part I humbly concur concerning the circulation of the blood with a eulogist of Vander Linden, who exclaimed:

Restituisti divino seni circuitum sanguinis quem incuriosa veterum hæc ætas, proh stupor! aliis adscripserat. Repererant margaritam in fimeto ignati a quo recondita fuisset. Et quid hoc ad illos novos Herostratos? W. T. O'Donnell.

THE REMOVAL OF THE SPINAL CORD POST MORTEM.

36 Montgomery Street, Syracuse, N. Y., *May 8, 1888.*

To the Editor of the New York Medical Journal:

Sir: In the last number of the Journal there appeared an article on the "Removal of the Spinal Cord," deploring the difficulty and the amount of time necessary for its accomplishment by the method of Virchow, used in Germany, England, and the United States. Another means, more satisfactory, as it is less difficult and more speedy, is used in Vienna. After the general autopsy has been performed the viscera are removed, exposing the anterior portion of the vertebral column. The instruments necessary are a mallet, a heavy, wide-jawed forceps, and two chisels—one for each side of the cord—having wide cutting edges inclined at an angle of about 30°. The chisel used for cutting the pedicles on the left side has on its edge a blunt projection large enough to steady the instrument when in use. The chisel for cutting the right side of the spine has the blunt portion of its edge on the right, its obliquity on the left. The body of the first lumbar vertebra having been removed, the blunt side of the chisel's edge is inserted into the canal, steadying the instrument and protecting the cord while the pedicles are cut by the oblique portion under the blows of the mallet. Changing instruments, the other side is treated in the same way, removing the vertebræ severed by breaking them off with the forceps. The pedicle should be cut close to the bodies, and, as the cord does not fill the foramina, there is little danger of wounding it. One accustomed to this method can remove the cord easily in five minutes.

H. H. Pease,

Demonstrator of Anatomy, Syracuse Medical College.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of May 1, 1888.

The President, Dr. C. L. Dana, in the Chair.

Address by the retiring President.—Dr. Dana, the retiring president, stated that during his term of office, since May, 1886, fifteen new members had been received and two members had resigned, leaving the present membership eighty-six. The names of a number of distinguished European neurologists had been added to the list of honorary members, and a new order of associated members had been created. The latter included active but non-resident members. Forty-seven scientific communications had been presented during the two years. Among these had been accounts of the first case of Thomsen's disease reported in this country, the first case of cerebral tumor operated upon, the first case of coprolalia, of syringomyelia, and of professional hyperkinesis of the larynx. Early reports upon the use of cocaine and antipyrine might also be mentioned. The society was the oldest of its kind in this if not in any country. The speaker recommended raising the annual dues and limiting membership to persons doing actual neurological work. By restricting its work to that which was technical and special the society would achieve its greatest success.

Address of the newly elected President.—Dr. George W. Jacoby, the newly elected president, acknowledged the honor conferred upon him, and commented upon the duties and responsibilities of the office to which he had succeeded, particularly urging upon members regular attendance and personal interest in the society's work. He then read an address on "The Significance of the Epiblastic Origin of the Central Nervous System" (see page 477).

Paralysis Agitans.—Dr. Leonard Weber followed with a paper upon this disease, which had been first described by Parkinson in 1817. Charcot had differentiated it from disseminated sclerosis. Progressive tremor and muscular weakness, affecting first one limb and subsequently spreading to other limbs, were its chief symptoms. According to Charcot, the head was always respected. There was apparent diminution of muscular force, and in well-advanced cases movements were slow and uncertain. There was loss of the faculty of equilibrium. In trying to walk the patient would run, appearing to be running after his lost center of gravity. There was bending of the body to a stooping posture, and there was an immobile facial expression, with a fixed stare. Death occurred from marasmus or intercurrent disease. The onset was insidious; a foot, a hand, or even a thumb was first affected. The crossed form was rare, and the hemiplegic form was more common than the paraplegic. Charcot had referred to cases in which pain had been the first symptom, tremor following later on. Deglutition was not interfered with, the bladder and rectum but seldom. There might be annoying cramps, but contractures did not occur. Deformity might be present, giving to the hands the aspect of arthritis deformans. Glycosuria had been noted. This complication had been present in a case of his own. In an advanced stage there was disturbance both of thought and of action. Neuralgias were present, with a sense of fatigue and restlessness requiring frequent change in position. There was a subjective feeling of heat. Marked melancholia or general hallucinations might be present, with even maniacal attacks. Remak had differentiated a cerebral and a spinal form. In two of the author's own cases cerebral and in two others spinal symptoms had predominated. Nothing definite to account for the tremor had been found in either the brain or the cord. It was a disease which affected the lower strata of society particularly, and men rather than women. It was a disease of advanced life, though Meschede had reported a case in a boy of twelve years where it had developed after a kick in the face by a horse; and Duchenne, one in a young man of twenty. It was said to be more frequent among English and American people than among those of other nations. Powerful emotional and moral shocks had produced it, also irritation of the peripheral nerves by traumatism. Prolonged damp cold was a cause; also, in the reader's opinion, sexual excess. He had not observed that syphilis had anything to do with its production. Heredity was said not to be a factor, but in one of his own cases the patient's father and two brothers, and in another one brother, had been affected.

Arsenic, ergot, and nitrate of silver had no retarding action. The comfort of the patient might be increased by using Brown-Séquard's bromide mixture, leaving the iodide of potassium out. Hyoscyamine had not been of any value in the reader's experience, producing head symptoms and even maniacal attacks. He had used the amorphous preparation in $\frac{1}{10}$-grain doses. Antipyrine, in 15- to 20-grain doses, gave rest at night in some cases. Chloral, too, had been useful, but the effect of both had been transitory. He had found paraldehyde superior to either as a hypnotic in these cases. It was given in emulsion, 15 to 30 grains at a dose. It did not affect the stomach, did not weaken the heart, and did not lose its efficiency by use. The galvanic current would relieve the feeling of fatigue. Tepid half-baths, with cold affusions to the head and spine, were even more effective and prompt. The reader had had twelve cases, in five of which the patients had been under his care sufficiently long for study. He briefly referred to these cases.

Case I was that of a man of seventy years, in whom the disease had existed for twenty-four years. The patient was still able to get about. The disease was produced by cold.

Case II was that of a woman of seventy years, first seen by the reader in 1884. This patient was a very cultivated lady, with a fine intellect and a great knowledge of men and affairs. The disease dated from 1876, and an occasion upon which she had received news of the illness of a loved daughter. The expression of face in this case was markedly sad and immobile. There was little neuralgia, there was no spastic paralysis, and there were no contractures. A peculiar feature was atrophy of the epidermis of the hands, forearms, feet, and legs. Death occurred in 1887 from pneumonia. Nightly sufferings had been relieved in this case by paraldehyde for six months.

Case III was that of a man of fifty-three years, a German, addicted to drinking and smoking in excess. The disease had existed for seven years, and glycosuria was present. The weight, which had been 320 pounds, had been reduced to, but not below, 280 pounds. Œdema of the legs had been present in this case for six months. Paraldehyde, in a dose of thirty grains at bedtime, gave a good night's rest.

Case IV was that of a German, sixty-three years of age, a market dealer, presenting as causes for his illness exposure to rheumatic influences connected with his business and sexual excess. The right hand had been first affected, and in the course of the following year the arm and shoulder. The right leg had been seized during the last six months. There was paræsthesia but no neuralgia in this case.

Case V was that of a German, seventy-two years of age, whose father and two brothers also suffered from the disease. The left upper and lower extremities only were affected, and thus the case differed from the usual hemiplegic form, which affected the right side. It was to be remarked, however, that this patient was left-handed. The shaking was violent in this case. The patient was easily excited and suffered with vertigo and headache.

Dr. **Dana** felt that the obscure points of pathology and treatment should receive consideration. We did not know the nature of the disease, nor how to cure it. It was his opinion that paralysis agitans was a degenerative disorder of the voluntary motor system. The sensory symptoms and the mental inquietude were explained by the close relations between the motor and sensory centers. The speaker had had twenty cases under his own observation, and had seen eighteen others in the Bellevue Out-door department. Two patients had been between thirty and forty years of age; five, between forty and fifty: eighteen, between fifty and sixty; nine, between sixty and seventy; and four, between seventy and eighty. Of thirty-one, twenty had been males and eleven females. Of thirty-four in whom the race had been mentioned, twenty-six had been Irish; six, German; one, Russian; and one born in the United States. The Celtic element had thus greatly preponderated, a fact not entirely explained by the large percentage of Irish attendants at this dispensary. The disease seemed to be increasing in frequency; from 1876 to 1879 the Bellevue Dispensary had presented but seven cases of paralysis agitans in a total of 2,300 cases, while from 1885 to 1888 eleven were recorded out of a total of 2,200. The speaker could corroborate the statement that rheumatic influences were active in its production. He, too, had had a case complicated with diabetes, and he had had four cases in which the head had been affected. He thought this not uncommon. It might be shown in the muscles of the angles of the mouth and of the tongue. In treatment, hyoscyamine had given the best results. He had used, however, not the amorphous, but the crystalline form, in $\frac{1}{100}$- to $\frac{1}{60}$-grain doses. Given thus, it had never failed to exert a palliative action.

Dr. M. A. **Starr** called attention to a monograph upon "Paralysis Agitans" by Anton Heimann, published in Berlin six weeks ago, and only last week received here, in which the theory of cortical origin, referred to by Dr. Dana, was supported by the report of a case. In this case, which had developed under the writer's observation, the four limbs were affected. The lesion could be located as hæmorrhage into the internal capsule. Coincidently the paralysis agitans had ceased upon the hemiplegic side. The inference was that the paralysis agitans was due to impulses from the cortex through the internal capsule, and that the irritated cortical centers were cut off from the muscles by the injury. Gowers had demonstrated, too, that the rate of vibration in paralysis agitans was eight to the second. It was known that irritation of the cortex of a moderate degree, in monkeys, produced tremor of the muscles characterized by eight vibrations to the second. In regard to the extension of the tremor to the head, while Charcot had stated that the head never was affected, the majority of German observers, among whom were Seeligmüller, Strümpell, and Heimann, added to Gowers, in his new book, had found the head affected in a considerable proportion of cases. The speaker had had seven cases of paralysis agitans under his care during the last two years. The tremor had affected the head in two of these cases. He could join Dr. Dana in his indorsement of hyoscyamine, given in the crystalline form and in $\frac{1}{100}$-grain doses.

Dr. L. C. **Gray** considered the origin of the tremor very obscure. He recalled a case presenting the typical symptoms of disseminated sclerosis. The patient was under observation in the hospital for a year and a half, and the post mortem showed nothing but a cortical meningitis, with no lesion in the brain or cord. The speaker did not agree with Dr. Weber that the diagnosis between paralysis agitans and disseminated sclerosis was in all cases easy to make. Voluntary tremor might be present in both, and in the earlier stages the diagnosis might be impossible. In one of the most typical cases which he had known, too, there had been movements of the head. It was that of a woman of seventy-five years, who had had paralysis agitans for thirty years. It had started one day when she was on a ferry-boat, on her seeing a baby fall into the water and, buoyed up by its long clothes, float down the stream. Upon getting home she had found her upper lip quivering like that of a rabbit. This had been the commencement of a widespread affection.

Dr. **Graeme M. Hammond** had seen three or four typical cases of face tremor. In the case of a patient whose brain was now in his possession, the paralysis agitans had been present for eight years. There had been no change in the voice, but during the last year there had been paralysis of the tongue, lips, throat, lungs, and heart, which had finally terminated life. Post mortem there was absolutely nothing found, no softening in the medulla and no change in the cortex. A few years ago the speaker had collected all the reports of autopsies which he could find of cases of athetosis, chorea, ataxic tremor, and paralysis agitans. Where any lesion was found, it occupied the position of the gray nerve-cells of the optic thalamus, corpus striatum, or cortex. Where spastic spasm was present, either combined with the tremor or alone, the white fibers of the internal capsule were affected as well. Where spastic spasm was not present, the lesion did not affect these tracts.

Dr. Rockwell had had two or three cases in persons under forty years. He thought that the younger patients responded best to palliative treatment. He recalled the case of a patient from Peru whom he had treated with hyoscyamine in $\frac{1}{100}$-grain doses and the galvanic current. This patient had returned to his home apparently cured. The symptoms returned, he came back, was again subjected to treatment, was again cured, and had remained well for a year.

Dr. Sachs regarded Dr. Heimann's argument as ingenious, but not conclusive. Hæmorrhage into the internal capsule was the commonest cause of hemiplegia in middle life. Hemiplegia was not very uncommon in the course of paralysis agitans, and it did not interfere with the tremor. In regard to the involvement of the head, he had a case now under treatment in which the head was affected. He used hyoscyamine in the crystalline form, and had found it so reliable as a palliative that no other drug was required. Even in severe cases the tremor was lessened by means of it.

Dr. Petersen referred to the fact that, when he was in the Poughkeepsie asylum, while administering hydrobromide of hyoscyamine for headache, he had incidentally relieved the tremor of paralysis agitans.

Dr. Weber thought that Charcot's rule as to the involvement of the head would be found correct in the main. General shaking would move the head, but tremor of the intrinsic muscles he thought rare. In regard to Dr. Rockwell's case he should hesitate about pronouncing the patient cured. Paralysis not unfrequently presented intermissions of a year or two, but would ultimately return. In regard to hyoscyamine, he had tried it some years ago; possibly not of such good quality as that now obtained. He would again give it a trial in the crystalline form.

NEW YORK SURGICAL SOCIETY.

Meeting of April 25, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Unusual Power of Motion after Extensive Shell-wound of the Shoulder.—Dr. R. F. Weir presented a patient who had received a wound from a fragment of shell at the battle of Antietam in 1862. The outer portion of the right clavicle, the acromion, and the greater part of the spine and upper edge of the scapula had been carried away, with the soft parts covering them, although the shoulder joint had not been exposed. Dr. Gurdon Buck had performed a superficial plastic operation a few months after the patient's recovery from the injury. He now had almost perfect use of his arm in spite of the great loss of muscular and bony parts; he could raise and move it freely, although not quite so much as the left. When both arms were raised vertically, some shortening was noticeable in the right. This was only an apparent impairment and due to the new attachment of the deltoid.

Fractures of the Head of the Fibula from Muscular Contraction, involving the External Popliteal Nerve.—Dr. Weir read a paper with this title (see page 561).

Dr. H. B. Sands asked what the result of the injury had been as regarded paralysis.

Dr. Weir replied that he had not recently seen the patient, but that after the lapse of nearly a year the patient was able to walk ten miles with only a slight limp; that he was able to dance freely.

Dr. Sands said that the fact that the patient limped did not prove anything above the recovery of power in the peroneal muscles.

Dr. Weir said that it was impossible to discover by the ordinary electrical tests whether the nerve was simply contused or entirely divided.

Dr. R. Abbe thought that surgically tenotomy of the biceps tendon at a point above the seat of fracture would be of advantage in relieving the tension whether the fragments were wired or not.

Dr. C. McBurney asked if any attempt had been made to see if the fragments could be brought together.

Dr. Weir said that such an attempt had been made when the patient was etherized the first time.

Dr. McBurney said that it would have been very difficult to wire the fragments without dividing the hamstring-tendon. A V-shaped incision of the tendon might be made, the V being made in the lower portion, as had been done in a case of fracture of the patella under the care of Dr. Sands.

Dr. C. K. Briddon said that the tension might be relieved by splitting the tendon longitudinally.

Dr. Weir said that the history of these cases showed that only slight disability resulted, even where no effort had been made to approximate the fragments by flexion of the limb.

Dr. McBurney thought that it was a question if tenotomy of the biceps alone would have allowed the upper fragment to be drawn down in contact with the lower. The object aimed at was to draw the upper fragment down while the biceps-tendon was attached to it.

Dr. Abbe said that tenotomy would at least relieve the tension on the nerve.

Dr. McBurney thought that in order to relieve the tension on the nerve it was necessary to dissect the latter away from the muscle. If tenotomy was done to relieve nerve-tension, the muscle must be divided high up.

The President said that the reader had not dwelt on the possibility of this injury being produced by adduction of the leg. If it was regarded as due to muscular action alone, the surgeon might make more prolonged efforts at reduction than were desirable. In both of Duplay's cases the fracture was due to forcible adduction, and it was quite probable that this was true in Dr. Weir's case, especially as he had mentioned the fact that the knee seemed to be displaced outward. The latter showed that there must have been forcible adduction subsequent to, or contemporaneous with, the injury. It was noticeable that in several of the reported cases the injury was received while wrestling.

Congenital Deformity due to Malposition of the Scapula.—Dr. McBurney presented a young woman, aged twenty-three, who had a peculiar deformity of the right shoulder which was said to have existed since birth. The scapula was so placed that its lower angle pointed directly toward the spine, the superior angle projecting high above the center of the clavicle. The clavicle on this side was at least an inch and a half longer than the left one, but articulated normally with the sternum, and also completely with the acromial process. The speaker thought the deformity might have been caused by some accident occurring at the time of birth. The movements of the humerus were good, but the arm could not be raised beyond a right angle.

In reply to the president, Dr. McBurney said the coracoid process could be felt.

Dr. Sands said that he had seen a similar condition in a child two years before; he was sure that it had not been due to any injury received at birth. There had been no disability, but the scapula had been elevated as much as in the present case, so as to cause a conspicuous deformity in the neck. He had assisted Dr. Shaffer in dividing the trapezius and levator anguli scapulæ muscles, but no benefit had resulted from the operation. Subsequently the speaker had removed the portion of the scapula above the line of the spine; in addition to the elevation of the entire bone, its upper edge was curled forward. The child had been greatly benefited by the operation, and there seemed to be no reason why a similar procedure would not be successful in the case of Dr. McBurney's patient. The speaker had been unable to find a report of a similar case.

The President thought that there was a scroll-like change in the scapula of the patient presented, similar to that described by Dr. Sands. There seemed to be no paralysis of the scapular muscles.

Dr. McBurney believed that the upper angle of the bone might be removed.

Suprapubic Cystotomy for Encysted Calculi; Death from Renal Disease.—Dr. McBurney showed a bladder removed post mortem from a man, aged seventy-one, who came under his care two months before, suffering from cystitis. He was obliged to urinate every half-hour, the act being attended with great pain. Lithotrity had been performed three or four years before by the late Dr. Little, since which time the patient had been examined by several surgeons, who thought that the condition was simply cystitis. The speaker had sounded the bladder but could discover no stone, and the mucous membrane appeared to be quite smooth. As the patient was very anxious to be relieved, suprapubic cystotomy was done for the purpose of exploring the bladder. Near the median line and about half an inch above the left ureteric opening there was an opening three quarters of an inch in diameter, leading into a cavity as large as a hen's egg, in which were three small calculi. These were removed with the finger and forceps. They would hardly have been discovered if the lateral incision had been made. The patient died at the end of two weeks of a renal complication. He was relieved of pain after the operation.

To a question by the president, Dr. McBurney replied that no rectal examination had been made.

Dr. Weir thought that the opening of the sac as described by Dr. McBurney was quite unusual.

Septic Peritonitis following Perityphlitis.—The President showed a specimen and related the following history: A woman, eighteen years old, entered the Presbyterian Hospital, April 7th. Three days before she had been seized with violent pain in the right iliac region with one or two moderate attacks of vomiting and slight fever. Her bowels had moved daily. On examination soon after her entrance (late in the afternoon), a resonant tumor was found on the right side. The temperature was only 100·5°, so that operative interference was deferred. At ten the next morning the rectal temperature was 105·5°, that in the mouth being 99·4°, while in the axilla it was only 98·6°. The patient was then moribund and died the same evening. The rectal temperature half an hour before death was 108·5°; half an hour after death it had risen to 109·5°. At the autopsy a small quantity of turbid serum was found free in the abdominal cavity. There was a small encysted intra-peritoneal abscess in the epigastrium, and another in the right iliac fossa. The omentum was firmly adherent to the cæcum, the latter and a loop of small intestine being adherent to the abdominal wall. On raising the cæcum, the appendix lay entirely behind and adherent to it. There was a small abscess between them, and two small perforations in the latter, which did not communicate with the peritoneal cavity. On stripping back the cæcum, an abscess, containing about two drachms of pus, was found in the right iliac fossa between the layers of the mesocæcum. If the usual lateral incision had been made, this abscess might have been opened. Another intra-peritoneal abscess, containing at least a quart of thin pus, was situated below the liver and behind the ascending colon entirely covered by the ribs.

In reply to Dr. Weir, the President said that there was no trouble in the pelvis or with the gall-bladder. The large abscess was completely shut off by recent adhesions from the general cavity. The extra-peritoneal operation would have reached the extra-peritoneal abscess, while the intra-peritoneal would have opened one of the intra peritoneal abscesses, but would have left the extra-peritoneal unseen. There was no ulceration of the intestine or escape of fæces. The large and small abscesses were four inches apart, being separated by unchanged intestine and cellular tissue, although there was an infiltration of turbid serum in the connective tissue of the right iliac fossa.

Peritonitis; Gangrenous Cavity in Mesocolon; Adhesion of Small Intestine forming Acute Angle; Obstruction; Death.—Dr. Briddon reported the following case: C. H, aged fifty years, a man of temperate habits, contracted syphilis in early life, and had now some late tertiary lesions of the bones. Many years ago he had suffered from what were regarded as attacks of bilious colic. Last summer he had had two attacks of obscure and not severe pain in the left side of the abdomen, below the level of the umbilicus; it had yielded to simple remedies applied by himself. For a week prior to his seeing him he had had some dull pain in the same region. On Sunday night, March 25th, the pain had increased slightly, and, he thought, was due to the action of a dose of calomel and jalap that he had taken, although his bowels had been perfectly regular. Tuesday night, the 27th, while emptying his bowels, he had had a severe attack of pain, which, he had said, passed downward from the left side of the abdomen into the rectum and penis. Dr. Briddon saw him on Wednesday night, the 28th. The man's wife had sent for him without his knowledge, and he did not consider himself as sufficiently sick to require professional aid. He complained of occasional, not severe, pain in the left side of the abdomen, between the umbilicus and the left anterior superior spine of the ilium. The pain was paroxysmal and not severe. There was slight general intumescence of the belly. It was everywhere resonant, but there was a sense of resistance at the seat of pain. His pulse was 104; temperature, 102°. No nausea; bowels regular; stools of normal form and consistence. Ordered chlorodyne, gtt. xx, every four hours.

29th.—Condition better as regards pain, which he says has gone. Pulse, 108; temperature, 101°; in the evening, 102°. Slight tenderness on pressing the region that had been painful.

30th.—No complaint of pain; pulse and temperature about the same. Toward night he felt slight nausea, and vomited a little mucus; bowels had not moved since he had taken chlorodyne, and the torpor was attributed to the influence of that remedy. Early on Saturday morning, the 31st, he vomited twice some bilious matter that had no fæcal odor; but, suspecting obstruction, and not being able to determine as to the propriety of laparotomy, consultation with Dr. Lange and Dr. Janeway was requested. At the time these gentlemen saw the patient he had no return of the vomiting; had no pain, only tenderness on pressure; and some flatus had passed *per anum.* The speaker thought that the abdominal swelling had slightly increased; his temperature in the rectum was 102°. It was the opinion of the consultants, and with which opinion the speaker had concurred, that the patient was suffering from a localized peritonitis, and that the indications for surgical interference were not clear. A continuation of treatment, ice-coil, and hypodermics of morphine, were advised. In the evening he passed more wind, and it was hoped that fæces would soon follow. On the following morning, when he was visited, he was in collapse; temperature in the rectum 105°, pulse reduced to a thread and 140. He vomited no more until the moment before he died, at 9 P. M., when a large quantity of stercoraceous matter was ejected.

Autopsy, made fourteen hours after death: Cadaveric rigidity well marked; abdomen swollen and tympanitic. On exposing the abdominal cavity, the omentum was found adherent to the walls on the left side, and to the large and small intestines beneath. The adhesions were recent, and very easily broken down. On separating the omentum and lifting it up, one source of obstruction was manifest enough—a knuckle of ileum was found adherent to a neighboring portion of intestine at a very acute angle; in fact, about two inches of the wall of the gut were in close contact. There was no dilatation of the proximal side of the gut, whose diameter was the same as on the distal side of the obstruction, and pressure on the gut above forced some of the gases into the part below the bend. An attempt was made to remove these without disturbing the relation of parts, but the adhesions were so slight that they gave way. On stripping the omentum from the small intestine lying outside of this knuckle, the adhesion was found infiltrated with pus, and, tracing this farther outward, it led to a small, free cavity, bounded by small intestine, omentum, and the sigmoid flexure of the colon. The intestines, matted together at these points, were highly congested, and in the mesocolon was a gangrenous cavity as large as a filbert; it was distant about three quarters of an inch from the junction of the meso- with the colon, but it did not communicate with the cavity of the colon.

The reporter added that the symptoms were so obscure he was unable to decide whether the constipation was due to obstruction or to the use of opium. The patient did not vomit until just before death, and at no time did he have very severe pain, or present acute symptoms. Laparotomy would have been unavailing, as it was very difficult to discover the pus even at the autopsy.

In reply to a question by Dr. Weir, Dr. Briddon said that he was unable to account for the presence of the gangrenous patch; there was a small, sloughing cavity, barely admitting the tip of the little finger, containing only two drachms of pus. It was entirely separated from the general peritoneal cavity.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of March 26, 1888.

The President, Dr. Laurence Johnson, in the Chair.

Cerebral Symptoms of Pneumonia in Children.—Dr. L. Emmett Holt read the paper. Two points about pneumonia had been brought out very prominently in almost every textbook devoted to diseases of children. The first was that disturbances of the central nervous system were much more likely to be met with in young children than among adults; the second, that these were almost invariably associated with disease of the apex of the lung. Regarding these points, an analysis of 173 cases in his own experience might be of some interest. Seventy-three were cases of lobar pneumonia, with a mortality of 5·5 per cent.; 100 were cases of broncho-pneumonia, with a mortality of 34 per cent. One hundred and twenty-three patients were two years old or under; only 13 were over five years. Twenty per cent. of the whole number had presented decided cerebral symptoms. He had divided these into three groups: those attended by convulsions, 14 in number; those in which delirium was the principal symptom, 12 in number; and those in which neither delirium nor convulsions existed, but in which other symptoms decidedly cerebral in type were present, 8 in number. In half the cases the convulsions had been symptoms of invasion; in the other half they had come on toward the close of the disease. Only one case had presented both early and late convulsions. In almost all cases the convulsive movements had been general, and usually repeated. Initial convulsions had been succeeded by drowsiness or stupor, sometimes by light delirium. There had usually been nothing in the symptoms to indicate pulmonary disease during the first twenty-four or forty-eight hours. Delirium was most marked at the height of the disease, and, if intense, it generally lasted until the crisis. It was more commonly wild and excited, like that of cerebro-spinal meningitis. In addition to delirium, the patients had dilated or contracted pupils, involuntary passage of urine and fæces, boring of the head into the pillow, retracted abdomen, sordes on the lips and teeth, irregular pulse, and almost every symptom of cerebro-spinal meningitis. Other patients had persistent drowsiness or semi-stupor, occasionally alternating with periods of excitement, sometimes terminating in convulsions, simulating tubercular meningitis very closely. He did not include vomiting, as it was present in almost every case of pneumonia. Headache was frequent in children old enough to describe their sensations. He had not noticed irregular respiration, nor had he noticed the "gun-hammer position."

The practical question of most importance was to distinguish the cases from meningitis. This could be done only after careful and repeated examinations of the chest. This was too commonly omitted by the practitioner. The great frequency of pneumonia in early life imposed upon the physician the necessity of always excluding it before accepting any other explanation of a persistent high temperature in a child. The difficulties in diagnosis were much increased by a delayed appearance of positive physical signs, as in central pneumonia. In his own experience he had found that the cases with late physical signs had gradually grown smaller in number with his increased proficiency in diagnosis. Cough was usually present, but it was wanting in a sufficient number of cases during the first two or three days to make it of little value in obscure ones. Alteration of the pulse-respiration ratio was more important than any other single symptom. Accelerated respiration out of proportion to the pulse and temperature should always make us suspect disease of the lung, whatever other symptoms were present. Irregular respiration, especially of the Cheyne-Stokes type, was hardly ever seen in pneumonia.

A slow irregular or slow intermittent pulse did not occur in this disease. Irregularities and intermissions in a rapid pulse were common, but were of no significance. It was rare for the temperature in meningitis to remain so high as it was commonly in pneumonia. The loss of the knee jerk was the rule in meningitis. He was not aware that it had been recorded as absent in pneumonia. Localized paralyses were not present in pneumonia unless there was a complicating brain disease. The cerebral symptoms of pneumonia were usually less severe than and not so continuous as those of meningitis, so that the progress of the case almost invariably cleared up the doubt in diagnosis. Between broncho-pneumonia with cerebral symptoms and pulmonary tuberculosis with a few tubercles in the brain, he agreed with Jürgensen that the diagnosis might be impossible.

As to the ætiology of cerebral symptoms in pneumonia, they might depend upon complicating meningitis, although the reader had never seen such a case. In all but one of his cases the convulsions had occurred in patients under two years of age, while delirium had been most common between the ages of four and eight years. Delirium and stupor were much more commonly associated with high temperature than convulsions. Convulsions were more common in delicate children. Of the twelve patients with delirium, all but three had previously been healthy. Early convulsions had been most often seen in the lobar form, while late convulsions in every instance but one had occurred in broncho-pneumonia; delirium had been seen much oftener in the lobar form. There had been 38 cases of pure apex pneumonia, in 18 per cent. of which there had been cerebral symptoms. There had been 36 cases of pure base pneumonia, and in 11 per cent. of them cerebral symptoms. In 73 cases there had been extensive disease; in 26 per cent. of these there had been cerebral symptoms. In 56 per cent. of the 34 cases in which there had been cerebral symptoms the lesions had been extensive.

The predisposing factor to cerebral symptoms was to be found in the susceptibility of the nervous system, which was one of the striking peculiarities of all the acute pathological processes of infancy and childhood. Very extensive disease acted in two ways: by inducing nervous depression, and by interfering with hæmatosis. Regarding prognosis, we might conclude that, excepting late convulsions, the occurrence of cerebral symptoms in pneumonia did not very much increase the danger of the disease.

The reader drew the following conclusions: 1. Cerebral symptoms in the pneumonia of children were very common. 2. Convulsions belonged almost without exception to infancy, being rarely met with after the age of two years. Occurring at the onset, they belonged essentially to lobar pneumonia; they did not indicate a bad prognosis, nor even in most cases a severe attack. When late convulsions came on, death within twenty-four hours might confidently be predicted. 3. Delirium came oftenest between the ages of five and eight, usually in conjunction with extensive disease and high temperature. These cases, although severe, with but few exceptions ended in recovery. 4. There was no such intimate association between cerebral symptoms and apex disease as had been frequently stated. Such symptoms occurred in only about one fifth of the apex cases. 5. Nervous spmptoms occurred much more frequently when the disease was extensive and the temperature very high. He closed by emphasizing two points in treatment: First, that in the hyperpyrexia of pneumonia the cold pack was a safe and the most efficient means of reducing the temperature. Second, the use of antipyrine to allay restlessness, quiet delirium and cough, and promote sleep. Doses of two or three grains were sufficient in an infant of from six to nine months. It might be repeated every six or eight hours.

Dr. **Andrew H. Smith** thought, with regard to the immediate cause of the cerebral symptoms in pneumonia, that the cases might be divided into three classes: 1. Those in which the cerebral symptoms were brought about by the direct influence of the pneumonic poison. 2. Those in which they resulted from high temperature. 3. Those in which they resulted from exhaustion. He regarded lobar pneumonia as an infectious disease, and as likely to be ushered in by cerebral symptoms, like other infectious diseases. The convulsion in children corresponded to the chill in adults. There might be apparently broncho-pneumonia, yet associated with it might be isolated spots of the croupous variety. Convulsions were in some instances associated with exhaustion. He was inclined to ascribe delirium in most cases to high temperature. Then there was a group of cerebral symptoms more or less of a typhoid character which occurred in the later stage, and were the result of exhaustion. He thought kidney complications might cause cerebral symptoms in some cases. Gastro-intestinal disturbances also produced their share of cerebral symptoms. He agreed with Dr. Holt regarding the beneficial effects of small doses of antipyrine in subduing restlessness and insomnia.

Dr. **Joseph E. Winters** was glad that Dr. Holt had knocked down one of the idols of the text-books. He referred to the relation between pneumonia of the apex and the occurrence of cerebral symptoms in children. He agreed with Dr. Holt that the more extensive the pneumonia the more likely were there to be cerebral symptoms. He doubted very much whether convulsions took place at the commencement of a pneumonia without one of the following predisposing causes: 1. Previous convulsions from one cause or another. 2. Inherited neurotic habit. 3. Aural trouble, induced perhaps by the same condition which caused the pneumonia. He adapted his treatment to the cause of the convulsion. He thought it was quite true that those who were accustomed to examine for central pneumonia in every doubtful case were much less likely to overlook this disease than those who so frequently neglected careful physical examination. Especially should one lift the arm and auscultate in the axillary space.

Dr. **Seibert** called attention to the statement made in the paper that late convulsions occurred principally in broncho-pneumonia, and all proved fatal within twenty-four hours, while early convulsions occurred mostly in lobar pneumonia, and these cases did not prove fatal. These facts, he thought, went to prove that lobar pneumonia was an infectious disease. He thought that the early convulsions were due to the poison of the disease, and that high temperature had little to do with it. Late convulsions were simply the result of long-continued disease and its effect upon the brain. With regard to the effect of high temperature, he had seen it higher and longer continued in other diseases than in pneumonia without causing convulsions or delirium.

Dr. **H. D. Chapin** said that most cases of pneumonia in which convulsions took place were accompanied by very high temperature; when the temperature went down the convulsions ceased. A temperature of only about 102° F. in the pneumonia of children was not accompanied by any severe nervous symptom. One speaker had said children might in some affections have a temperature of 105° F., and not show discomfort. He had never seen such a case. He was not yet prepared to accept the view that the text-books were in error in stating that pneumonia of the apex was more likely to be accompanied by cerebral symptoms. At any rate, in all his cases of pneumonia in the apex there had been cerebral symptoms, usually stupor rather than convulsions. Regarding treatment, he accepted the remarks of Dr. Holt concerning the benefit derived from cold applications, but he thought antipyrine was dangerous, on account of its weakening effect upon the heart, and it was unnecessary for the purposes suggested by Dr. Holt, if the cold applications were employed, as they not only reduced the tempera ture, but also quieted restlessness and induced sleep.

Dr. **A. Caillé** said there were many forms of diseases, especially acute infectious diseases, which were ushered in by cerebral symptoms, and pneumonia was not an exception. He thought the intensity of the disease was probably a cause of the cerebral symptoms. The cerebral symptoms at the beginning were due to a different cause from those which appeared toward the close of an attack of pneumonia; the latter were probably caused by anæmia, and the former by hyperæmia of the brain. He had noticed in three or four cases of pneumonia ushered in by cerebral symptoms that the pupils were unusally large, but reacted to light. In other cases without this complication they were not so large. He agreed with Dr. Holt regarding the value of the cold pack.

Dr. S. J. McNutt said her experience had been like Dr. Holt's, that cerebral symptoms in pneumonia were not specially limited to the cases in which the disease attacked the apex. She had observed that cerebral symptoms were just as likely to occur in patients who were by nature nervous as in the well developed. She had noticed a likelihood of other children taking lobar pneumonia when one was introduced into a hospital suffering from that disease. She had used the cold pack frequently with much benefit, particularly in broncho-pneumonia. In the late stage, when there was a tendency to heart failure, musk had proved of great value.

Dr. Seibert added that he also looked upon antipyrine as a dangerous drug, unless properly administered and in suitable cases. He had noticed that when the temperature went down under antipyrine and the pulse remained high, the antipyrine had produced no valuable result.

Dr. J. A. Irwin said that in his experience the locality of the pneumonia had had little to do with the cerebral symptoms, which he believed were entirely reflex. The diagnosis in these cases was usually made, he believed, from symptoms rather than from physical signs. He thought that, as a rule, the most successful practitioner was he who was influenced in his treatment by the symptoms rather than by the physical signs, and he objected to frequent examinations, which implied disturbance of the patient. Many patients had been placed in danger by frequent examinations, whether made for diagnostic purposes by consulting physicians or for other reasons. When he made a diagnosis of pneumonia he gave his patient rest, and was guided in his further treatment of the case by the pulse and general appearance more than by the result of physical examination of the chest. He did not fully agree to the view that nervous symptoms did not render the prognosis less favorable. Yet reflex nervous symptoms often occurred in those who had the greatest reactionary power. He had seen cerebral symptoms oftener in obscure cases of central pneumonia than in any other class of cases. In the catarrhal type, usually bronchial in the beginning, late cerebral symptoms were the precursors of death.

Dr. David P. Austin referred to treatment, and spoke of the value of cacao butter, used by inunction, in not only keeping up the nutrition of the patient, but also reducing the temperature. After anointing the skin the temperature fell not infrequently two or three degrees within six or eight hours.

The President said, respecting the infectious nature of pneumonia, that he could not reconcile that view with the fact that the disease was most prevalent during the coldest months of the winter.

Dr. Holt said it had not been his intention to discuss the question of pathological differences between the forms of pneumonia in children, but he stated that in many cases of presumable lobar pneumonia the microscopical examination revealed little different from what was present in disseminated broncho-pneumonia, except the extent of the disease. He had commonly observed a high temperature in the convulsions of children, even when idiopathic in nature. But in these cases it went down again quickly. He thought the convulsion might be the cause of the high temperature rather than the reverse. Regarding there being a temperature of 105° F. without causing discomfort, it was not at all uncommon. With regard to danger from antipyrine, he had used it a great deal in small doses in children without ever causing any unfavorable symptoms. Like Dr. Caillé, he had seen in some cases dilatation of the pupil with reaction to light in patients having cerebral symptoms complicating early pneumonia. Cacao butter often added to the comfort of the patient.

Book Notices.

Essays on Hysteria, Brain Tumor, and other Cases of Nervous Disease. By Mary Putnam Jacobi, M. D., etc. New York and London: G. P. Putnam's Sons, 1888. Pp. 216. [Price, $2.]

Emerson calls the best man the one who can define, can answer a question so as to admit of no further answer. On this principle of excellence, the "Essays" contain much that is the best in connection with the subjects of which they treat. The paper on hysteria is rational, exhaustive, and convincing. It starts out with a consideration of the twofold condition fundamental to hysteria: a congenital or acquired deficiency in the power of nerve-elements to affect the storage of force in nerve-tissues. Then the manifestations of this profound and far-reaching disease are carefully considered, and a truly catholic plan of treatment suggested. "The Prophylaxis of Insanity" recommends itself to the thoughtful. The three great elements in the moral substratum of a person predisposed to insanity are: "The egotistical predominance of the instincts over the faculties of reflection and external relation; the ineffectiveness of the will, even when this is impulsive or violent; the inaptitude for ideas, resulting in their poverty and imperfect combination." The author affirms with reason that the expansion of this shrunken individuality can be effected by means of a strenuous educational system, directed at once toward the repression of the egotistic instincts, the enrichment and systematization of the ideas, and, through multiplication of acts and external relations, the energizing of the feeble will. Great stress is laid upon the fact that the acquisition of knowledge, training in morals, formation of habits of thought, must all be centered upon practical activities. As ideas enter the forming mind from without, the carefully guarded child has a hopeful outlook, in spite of neuropathic ancestry. Environment being a more potent factor than heredity, it is no more necessary to become insane than inebriate because of transmitted predispositions. The "Essays" are models of terseness, force, and conclusive argument. They form a valuable contribution to medical literature, and are deserving of both gratitude and praise.

Miscellany.

The late Dr. Agnew.—At a meeting of the Board of Trustees of the College of Physicians and Surgeons in the city of New York, held on the 1st inst., the following minutes were presented:

"Since the last meeting of this Board of Trustees one of its controlling spirits, and one of the stanchest friends and most distinguished teachers of the College of Physicians and Surgeons, has suddenly, and in the full tide of his usefulness, departed this life.

"The death of Dr. Agnew creates what seems like a hopeless void in our councils, and casts a deep shadow across the path of brilliant promise upon which the college has just entered. Since his graduation from this institution in 1852, Dr. Agnew has fostered and advanced its interests as a faithful alumnus, has enlarged its fame as one of its most popular and eminent instructors, and for more than ten years has served to direct its management as a diligent and wise trustee.

"In all his labors for the welfare and distinction of his alma mater he displayed a lofty purpose and a generous devotion of his time and energy. He has been identified with every measure in the management of this college which was directed toward improving its methods of instruction or elevating the standard of its requirements. He combined in a rare degree the attributes of a scientific teacher, a wise philanthropist, and a man of affairs. He had an exalted sense of the public as well as the private responsibilities of medical men, and he was not less distinguished as a citizen and a sanitarian than as a physician.

"In the many and varied relations of his busy and useful life he will long be remembered for the dignity of his character and his unselfish devotion to the highest interests of his fellow-men!"

George G. Wheelock, M. D., *Registrar.*

The Medical College of the State of South Carolina.—The chair of surgery has been divided to enable Professor R. A. Kinloch to devote his entire attention to clinical surgery. Dr. Manning Simons has been appointed to the chair of didactic surgery. Dr. P. Gourdin De Saussure has been appointed to fill the chair of obstetrics and gynæcology made vacant by the death of Dr. J. Ford Prioleau, whose position as dean has been filled by the appointment of Dr. Kinloch.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality," for April, there were 502 deaths during the month, including 1 from cholera infantum, 5 from croup, 8 from cerebro-spinal meningitis, 11 from diphtheria, 2 from erysipelas, 13 from typhoid fever, 1 from measles, 5 from pyæmia, 3 from whooping-cough, 1 from syphilis, 2 from septicæmia, 4 from scarlet fever, and 4 from small-pox.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending May 18th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending April 28th corresponded to an annual rate of 18·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bolton and Hull, viz., 14·7, and the highest in Blackburn, viz., 25·9 in a thousand. Small-pox caused 5 deaths in Sheffield, 1 in Bristol, and 1 in London.

During the quarter ending March 31st, 150,014 deaths were registered, including whooping-cough, 4,428; measles, 2,129; scarlet fever, 1,868; diphtheria, 1,447; fever, 1,362; diarrhœa, 1,295; and small-pox, 583.

London.—One thousand four hundred and thirty-seven deaths were registered during the week, including measles, 16; scarlet fever, 15; diphtheria, 22; whooping-cough, 80; enteric fever, 7; diarrhœa and dysentery, 17. The deaths from all causes corresponded to an annual rate of 17·5 in a thousand. Diseases of the respiratory organs caused 343 deaths; different forms of violence, 56; and 9 suicides were registered. In greater London 1,782 deaths were registered, corresponding to an annual rate of 16·8 in a thousand of the population. In the "outer ring" 28 deaths from whooping-cough, and diphtheria, 9, were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending April 28th in the sixteen principal town districts of Ireland was 29 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 12·7, and the highest in Lisburn, viz., 48·3 in a thousand. In Dublin 213 deaths were registered, including 5 from whooping-cough; scarlet fever, 7; typhus, 1; diphtheria, 1; enteric fever, 4; and measles, 3.

Scotland.—The deaths registered in eight principal towns during the week ending April 28th corresponded to an annual rate of 21 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 14·9, and the highest in Paisley, viz., 32 in a thousand. The aggregate number of deaths registered from all causes was 530, including 8 from measles; scarlet fever, 4; diphtheria, 5; whooping-cough, 17; fever, 3; and diarrhœa, 12.

Netherlands.—The deaths registered in the twelve principal cities of the Netherlands, having an aggregate population of 1,101,568, during the year 1887 corresponded to an annual rate of 23 in a thousand. The lowest mortality was recorded in Haarlem, viz., 21·1, and the highest in Maastricht, viz., 27·1 in a thousand.

Calcutta.—One thousand and twenty deaths were registered during the month of February, 1888, including 182 from cholera.

St. Thomas, W. I.—Four hundred and sixty-two deaths were registered during the year 1887, including intermittent and remittent fever, 79; small-pox, 1; and leprosy, 3.

Ceara, Brazil.—Two hundred deaths were registered during the month of March, including 5 from yellow fever.

Valparaiso, Chili.—The United States consul, in his dispatch dated March 17, 1888, relative to cholera, states that "until last year the disease was unknown here in its epidemic form, when, in spite of guards and military pickets in the mountains, it crossed from the east to Santiago, invading many smaller communities and causing numerous deaths by its virulent character. It was, no doubt, the more deadly for the want of knowledge for its successful diagnosis and treatment, and for the absence of properly organized ambulance and hospital service. These were partially remedied by private subscriptions and exertions, with some governmental aid, and the then intendente of this province acted with energy and resolution. Disinfectants were freely employed, the sale of fruit was prohibited, and, after various fluctuations in the progress of the disease, which had broken out severely in this port, it disappeared from this part of the country with the setting in of the winter season. After a few months, however, it reappeared about Conception and Talcahuano, some two or three hundred miles down the coast, and with the coming on of summer it broke out violently near Santiago, in that city, and in Valparaiso, and has spread in all directions. In the mean time all the obvious precautions had been practically discontinued or disregarded by the authorities and the people. The lazarettos were closed, the ambulance service abandoned, and while the sale of fruit was forbidden, the prohibition against such sale has been revoked. It is everywhere asserted, and, so far as I know, everywhere freely admitted, that both last year and this the general government and the local authorities have studiously concealed or misrepresented the extent of the mortality. The population of this city is probably about 110,000. An eminent physician, educated as such in the United States, recently stated to me that his examination of the official records of deaths from cholera in Valparaiso from the 15th of December, 1887, to the 15th of February, 1888, showed 1,194 deaths, while, as is well known, many deaths from that disease are ascribed to 'indigestion,' etc. This reprehensible state of things is owing partly to the indulgent and surprising regulation which authorizes the issuance of a burial permit on the bare statement of two persons who knew the deceased and declared their opinion as to the cause of his death. The same physician told me that in the period referred to—two months—thirty of his private patients had died of cholera. He estimates, deducing his estimates from various sources, that the mortality in this city alone for that time reaches 3,000, and for the whole country he places it at 60,000. Another physician of standing, whose practice from his official position is in a part of the city inhabited mostly by the poorer and more ignorant classes, places the cholera mortality during the same period at from 4,000 to 5,000. I consider it my duty to refer in this report to the fact that the certificates of health from the office of the captain of the port are altogether untrustworthy. The American steamer City of Pueblo, which sailed on 1st December last from Valparaiso for San Francisco, had, as I was informed (being requested by the consignees to add my certificate, which, of course, I refused to do), a full certificate of the existence here of no epidemic disease, this long after cholera had reappeared; and the American schooner Oscar and Hattie, of Marblehead, sailed from Valparaiso for Seattle, Washington, on 10th instant, with a certificate concluding—

"I certify, also, that the sanitary condition of this port is good, and that there are no cases of epidemic sick (persons)."

Trujillo, Venezuela.—The United States consul at Maracaibo, in his dispatch dated April 27, 1888, states that "for several months past the section Trujillo, of the State of Los Andes, a mountainous region lying to the southward of Lake Maracaibo, has suffered severely from yellow fever, and recently the disease has made such progress as to almost decimate the population and cause the virtual abandonment of various thriving towns, among them notably the city of Trujillo, capital of the section of the same name, and one of the most important centers of the State.

"A curious and apparently anomalous fact in connection with this epidemic is that Maracaibo, together with the coast generally, has never been more free from this disease, while the localities which have heretofore been looked upon as our sanitaria are undergoing terrible suffering, although they have an elevation of from three to five thousand feet above the sea-level. Such a complete reversal of sanitary conditions has never heretofore been known in this district, and it is worthy of note that Maracaibo, which has a bad, though undeserved, reputation, is, although situated but thirty feet above the level of the sea, sending assistance to the mountain regions, which are suffering from a usual coast disease, from which at present we are totally exempt."

Genoa, Italy.—Seven cases of small-pox are reported for the week ending April 28, 1888.

Santiago de Cuba.—The sanitary inspector reports for the week ending May 5th that there are no cases of yellow fever at present in the military hospital, and the town is unusually healthy just now.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM— Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	April 28.	2,260,945	1,002	..	....	9	....	15	2	48
Calcutta	March 31.	433,219	235	65	....	..	....	....	....	....
Amsterdam	April 28.	389,916	182	..	....	....	....	....	....	3
Rome	March 17.	382,973	170	..	....	1	....	3	....	4
Rome	March 24.	382,973	157	..	....	2	....	1	....	4
Copenhagen	April 17.	300,000	158	..	....	....	....	1	4	8
Munich	April 21.	275,000	139	..	....	....	....	2	....	3
Edinburgh	April 21.	262,733	101	..	....	....	....	2	....	1
Palermo	April 28.	250,000	88	..	....	....	....	....	2	2
Leipsic	April 28.	170,000	55	..	....	....	....	....	....	5
Toronto	May 5.	130,000	83	..	....	....	....	1	....	4
Stuttgart	April 28.	125,510	42	..	....	....	....	....	....	....
Bremen	April 21	122,000	52	..	....	....	....	....	....	....
Havre	April 28.	112,074	73	..	....	2	....	3	....	....
Leghorn	April 29.	101,718	38	..	....	....	....	....	....	....
Reims	April 28.	97,903	64	..	....	1	....	....	....	2
Cadiz	April 28.	65,028	40	..	....	....	....	....	....	....
Merida	April 30.	48,800	39	..	....	....	....	....	....	....
Cienfuegos	April 23.	40,573	18	..	....	2	....	....	....	....
Cienfuegos	April 30.	40,573	24	..	....	11	....	....	....	....
Maracaibo	April 28.	40,000	13	..	....	....	....	1	....	....
Curaçoa	April 28.	25,000	3	..	....	....	....	....	....	....
Gibraltar	April 22.	23,631	8	..	....	....	....	1	....	....
Sagua la Grande.	April 28.	15,605	7	..	....	1	....	....	....	....
St. Thomas	April 27.	15,000	6	..	....	....	....	....	....	....
Matamoras	April 28.	12,000	13	..	....	....	....	....	....	....
Laguayra	April 28.	7,428	7	..	....	....	....	....	....	....

UNITED STATES.

Appalachicola, Fla.—The board of health have issued a quarantine proclamation containing twenty-seven sections. Section 2 requires that "all boats and vessels arriving at the port of Appalachicola on and after May 10, 1888, either foreign or domestic, upon which any contagious, infectious, or pestilential diseases have occurred or existed during the voyage to said city, or within thirty days next preceding the arrival of said boats or vessels at said port or city of Appalachicola, are forbidden to approach the city nearer than is specified in the rules and regulations of the board of health; . . . and are also forbidden to land any person or persons or goods until such boats or vessels have performed all quarantine, as directed by law and the rules and regulations of the board of health."

San Francisco, Cal.—Small-pox.—The secretary of the health department reports 22 cases and 4 deaths for the month of April. The Governor of Hong-Kong telegraphed to the mayor, "Small-pox no longer epidemic in Hong-Kong." . . . The Board of Health of San Francisco, at a meeting held May 4th, declined to declare Hong-Kong a non-infected port, and will still exercise the utmost precaution in landing Chinese and their baggage.

Portland, Me., May 10, 1888.—Since last report one case of varioloid, of a mild type, has been under municipal quarantine, and is now convalescent.

The Virus of Rabies.—The "Lancet's" Paris correspondent writes that Dr. V. Galtier recently made a communication to the Academy of Sciences on the persistence of the rabic virulence in corpses buried in the ground. According to the author, the rabic virus preserves its activity in bodies buried, so that, should any doubt arise after the burial as to the nature of the malady that had caused death, the exhumation of the body and the inoculation of the bulb are naturally indicated. In support of his thesis, Dr. Galtier stated that on November 25th last the body of a dead dog that had been buried for fifteen days was brought to him. The dog had left the house of his master after having presented signs of rabies and having bitten another dog and a fowl. According to the information obtained, and from what was noticed at the necropsy, there was no doubt that the dog had died from rabies. The brain was extracted on the same day, and a portion of the bulb was employed on the following day (November 26th), to practice an inoculation by trephining in a dog, which became furiously rabid on December 7th, and died paralyzed on the 10th. At the necropsy the stomach was found empty of food, but was filled with a mass of straw, exhaling an odor of manure; the œsophagus also contained straw in its thoracic portion; a brownish substance was found in the intestine; the larynx was vividly injected; the brain was congested, but there were no lesions consecutive to the trephining. The rabies of this first subject inoculated was transmitted with success to other animals. To sum up, the bulb of a dog that had been dead seventeen days from rabies and buried fifteen days, preserved all the virulence of the disease, which was proved by the manifestation of rabies in twelve days in a dog that had been inoculated, and which died fifteen days after the operation.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, June 2, 1888.

Original Communications.

THE PRESSURE PARALYSIS OF POTT'S DISEASE.[*]

By GEORGE R. ELLIOTT, M. D.

The object of this paper is to determine the mechanism of the lesion which gives rise to pressure paralysis of the spinal cord, limited to that form of paralysis which complicates Pott's disease.

Anatomical Considerations.—It may not be out of place to call attention to the following anatomical points:

1. The spinal cord reaches only to the lower border of the first lumbar vertebra.
2. The cord only partially fills the vertebral canal.
3. The cord swings in the spinal canal, insulated by means of the arachnoid fluid which surrounds it.
4. The cord is much nearer the anterior wall of the canal than the posterior, held in place by means of the anterior nerve-roots.
5. The tracts conducting motor impulses are more superficial than those transmitting sensory impulses.

It further may not be out of place to state that paralysis in Pott's disease bears no relation to deformity. A spinal column may be bent at nearly a right angle without giving rise to any paralytic symptoms, while in another case, manifesting no deformity, *complete paraplegia* may be present.

Pathology.—In order to arrive at an intelligent understanding of the pathology of the lesion to be considered in this paper, I cite briefly the carious process which is the exciting ætiological factor. It matters little whether we accept the tubercular theory of caries or not. The process is one insidious in its onset and slow in its progress. Cornil and Ranvier, in comparatively recent investigations, seem to show rather conclusively that the disease begins not as an inflammatory process, but a fatty degeneration of the bone cells. The result—a destruction of the bone cells and consequent inability on their part to perform their function as agents of nutrition. The osseous trabeculæ, killed by the death of their cellular elements, form so many small foreign bodies which determine suppurative inflammation about themselves. The medulla becomes vascular, adipose cells disappear and are replaced by embryonic cells, and suppuration is established. The bone cells which have escaped fatty degeneration become active, the osseous substance surrounding them is dissolved, the necrosed trabeculæ become free, and granulations or fungosities are formed from embryonic medulla. Islets of osseous tissue become necrosed oftentimes, and are dislodged by granulations and carried away by suppuration. In their place are left irregular cavities. Here, then, we have a suppurative process in progress which is most frequently confined to the anterior portions of the bodies of the vertebræ. These diseased portions, giving way, permit the vertebræ to fall together. The disease creeps dorsad and destroys, to a greater or less extent, the posterior common ligament. The latter, dissociated, allows the pus to pass from the vertebræ. The dura mater and the peridural tissue are aroused to inflammatory activity. The external surface of the dura mater becomes covered with granulations of a fungoid character, and infiltrated with caseous pus. This condition passes under the name of *pachymeningitis externa caseosa.* This process shows no tendency to extend beyond the site of the vertebral disease. It is limited. In a cross-section we can see how the diseased condition abruptly gives way to the healthy membrane.

Up to this point the pathology stands, I can safely say, undisputed. In the large majority of cases of caries of the spine the pathological chapter closes here. The products of inflammation remain imprisoned, ultimately to be absorbed and replaced by reparative material. Frequently paralytic symptoms manifest themselves, and here the pathology is by no means settled.

Ollivier[*] was among the first to describe at all carefully the changes which take place in the cord as a result of slow compression. He cites numerous cases where the membranes were found thickened and the cord softened without evidence of further disorganization. His findings were verified and described later by Louis.[†] These writers, and many of their followers who have described this form of paralysis, have dwelt upon the mechanical lesion alone as the cause of the paralysis. From time to time cases were reported where the cord seemed harder than normal, a condition not dwelt upon by these writers, and consequently no explanation offered. That the cord should become injured as a result of crumbling and broken vertebral bodies sufficient to lead to the production of marked angular curvatures, was considered but a natural sequence. This idea became so thoroughly fixed that many books, even to this day, refer only to bone as the pressure cause of the paralysis. It was noticed, however, that very frequently no paralysis followed in cases where the deformity was very marked. The spinal column might even be bent to a right angle as a result of the disease, and still no paralytic symptoms become manifest. That marked deformity can occur without the cord becoming compressed is also observed in lateral curvature, where sometimes the deformity assumes a frightful aspect. In the words of Fagge,[‡] "every pathological museum contains specimens which show that the spinal canal generally retains its full width, however much its direction may be altered."

Further, paralysis was seen to complicate caries when careful examination of the spinal column gave no evidence of deformity. These observations naturally called for some explanation other than the current view.

The middle of this century, which inaugurated an active interest in the physiology and pathology of the great nerve-centers, produced men who sought a solution of the problem. Among others, Charcot[*] and his pupils made investigations and published to the medical world their conclusions. To Michaud,[†] I think, can be credited the pioneer article upon this subject. These authors and investigators contended, and apparently demonstrated, that the cause of the paralysis in these cases is not directly due to a mechanical lesion, but to a myelitis the result of the mechanical lesion. Michaud held that myelitis was invariably the lesion, and even went so far as to claim its existence in cases giving no evidence of paralysis.

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[*] Read before the Section in Pathology of the Ninth International Congress, September, 1887.

[*] "Ueber das Rückenmark und seine Krankheiten," uebersetzt von Dr. J. Radius, Leipsic, 1824, p. 202.

[†] "Mémoire sur l'état de la moelle dans la carie vertébrale," Paris, 1826.

[‡] Fagge, vol. i, p. 410.

This explanation of the cause of this form of paralysis, first described by Michaud and Charcot, and subsequently supported by Bouchard[‡] and Courjon,[#] was accepted and apparently verified by Leyden[‖] in his microscopical examinations of compressed cords.

Great controversy has now long been in vogue regarding the exact nature of inflammatory processes of the cord. So loosely has the term myelitis been employed that various affections of the cord have been called myelitis—polio-myelitis, ascending and descending degeneration, various kinds of softening; all these have been described by observers under the head of inflammatory lesions.

Recent pathologists have come to look upon the disease myelitis as one giving rise to certain unmistakable and ever-present findings. Stricker, Leyden, Joffroy, Schultze,[△] Strümpell,[◊] and others have found the following pathological findings which they regard as pathognomonic of the inflammatory lesion:

1. Increased size of nerve-elements, axis-cylinders enlarged, or without the sheath of Schwann.
2. Swelling of the interstitial tissue and increase of same, according to age of process.
3. Increased number of round cells in the connective tissue and around the blood-vessels.
4. Enlargement of Deiter's cells.

The later stages characterized by hyperplasia of the connective tissue.

Erb practically coincides with the view of these authors, and their observations have been verified by numerous competent and careful observers both here and abroad.

The progress of the lesion in cases of slow compression is, as a rule, insidious, and, to reconcile the clinical symptoms with the lesion, the interstitial form of myelitis is believed to predominate. This is characterized by an increase of the neuroglia or connective tissue, similar to that occurring in other organs, the parenchyma becoming secondarily implicated. The interstitial tissue becomes increased, together with proliferation of the nuclei, great thickening of the walls of the blood-vessels, and distinct atrophy of the nerve-fibers. A later stage is characterized almost exclusively by the presence of connective tissue.

In support of the inflammatory theory are usually found post-mortem findings, showing the cord at the site of compression converted largely into connective tissue with thickened blood-vessels and sparsely distributed changed nerve-fibers and granular bodies.

Further, in one case examined by Michaud, when the compression had not as yet produced paralysis, but where sensory disturbances in the form of fulgurating pains were complained of by the patient, the microscope revealed increase of the connective tissue throughout the posterior root zone.

This explanation, then, of this form of pressure paralysis, which was so ably treated by Michaud and Charcot, supplemented by the studies of Courjon and Echéverria,[*] became as thoroughly implanted and accepted as had the explanation of Ollivier and Louis a quarter of a century before.

Let us proceed now to a closer study of the subject in hand, and to that end we ask, *Can a mechanical lesion satisfy the demands of pathology and symptomatology?* Let us see.

A mechanical cause is present. We have seen how the bodies of the vertebræ become destroyed by the carious process going on in the bone, leading to the formation of an abscess the walls of which are composed of bone and of the thickened surrounding soft tissues. We have further seen how the dura mater becomes involved, the process which goes on being called pachymeningitis externa caseosa. The abscess-cavity is not a simple one, but in it are developed fungoid granulations, and the abscess products tend to accumulate. Nature tends to fortify the walls as far as possible. It is not common for the pus to perforate the walls and escape into the surrounding tissues. The site of least resistance is toward the spinal cord, which swings insulated in the spinal canal. The membrane bulges into the canal and the cord recedes. The canal offers escape for the cord up to a certain limit, when, if bulging still goes on, the medullary substance is destined to suffer. Here, then, is practically a fluid sac, its pressure force commensurate with its fluid tension, mechanically an elastic ball.

Clinically, the appearance of a psoas or gluteal abscess in a case of paralysis is often attended with the disappearance of paralytic symptoms. No one who has seen many of these cases has failed to note this clinical symptom. It is unnecessary to dwell upon the mechanism of this relief further than this allusion to it. I may add that bone is sometimes found pressing upon the spinal cord post mortem in cases which have had paralytic symptoms.

What does the gross lesion tend to show? At the compressed site the spinal cord is often reduced in size to such an extent as to appear simply like a band of connective tissue. It is a striking fact that the diseased dura mater is limited to the site of the diseased vertebræ.

The change from "pachymeningite externe" to normal dura mater is abrupt. This has been noted by numerous observers. Cornil and Ranvier * say: "Inflammation of the dura mater is limited exactly to the parts of the vertebræ diseased." This change in the dura mater is invariably in the anterior part of the membrane, and only in grave cases of caries does it encircle more than half of the cord. Does not this limitation of the diseased dura to the exact site of vertebral disease argue the non-tendency of the inflammatory process to extend in the membrane beyond what is necessary to protect the cord from the abscess cavity itself—beyond nature's necessary protective area?

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[*] "De la compress. lente de la moelle ép.," "Leçons sur les mal. du syst. nerv.," 2me sér., 2me fasc., 1873.

[†] "Sur la méningite et la myélite dans le mal vertebral," Paris, 1871.

[‡] "Compress. lente de la moelle," "Diction. ency. des sc. médic.," 2me sér., vol. viii, p. 664, 1874.

[#] "Étude sur la paraplégie dans le mal de Pott," Paris, 1875.

[‖] "Klinik der Rückenmarks-Krankheiten," vol. ii, first part, p. 149.

[△] "Arch. f. klin. Med.," vol. xxv, p. 297; Virch. "Archiv," vol. lxviii, p. 111.

[◊] "Archiv f. klin. Med.," vol. xxx, p. 526.

[*] "Sur la nature des affections dites tuberculeuses des vertébres," Thèse, Paris, 1860.

Medullary Surface of the Dura Mater.—This is usually intact and perfectly normal in appearance, the inflammatory process seeming to have spent its force in the external layers. Microscopical examination of the diseased membrane rarely shows even infiltration of the internal layers. Can we not draw from this a further inference of the non-tendency of the process to extend? Here, then, is a slow form of inflammation which does not seem active enough to extend beyond the limits of the diseased vertebræ, not active enough to involve, as a rule, the internal layers of the membrane in which it originates. Is it possible, then, *a priori*, that it will extend to the cord? It is proved, then, I think, that the *irritation force* is simply that of the pressure of a bland mechanical body.

Is there anything in the pathological findings to militate against the lesion being a mechanical one? Examination of compressed cords in the recent state show:

1. Granule cells, many or few, according to the mass of destroyed nerve-fibers.
2. *Débris* of broken-down nerve-tissue.
3. Swollen axis-cylinders, or absence of the same.

If examined at a later stage:

1. Nothing indicating changes in the blood-vessels.
2. No increase of cells about the vessels.
3. Occasionally traumatic hæmorrhage.
4. Nerve-fibers in course of destruction and others which have been destroyed.
5. Swollen axis-cylinders or empty spaces, the former site of nerve-fibers.

Then follows, as in all other analogous conditions, a secondary increase of the neuroglia.

Experimental Physiology.—It is a settled fact that pressure upon nerve-trunks interferes with nerve conductivity. It has been demonstrated over and over again that a very moderate constrictive force about a nerve separates the myeline within the sheath, and, if severe enough, leads to secondary degeneration, accompanied by all its pathological findings, rendering the nerve incapable of transmitting nerve impulses—*e. g.*, the injury to the musculo-spiral nerve from pressure. Has it been demonstrated in these cases that the pressure invariably leads to a neuritis in the sense of an inflammatory lesion?

Vulpian has shown experimentally that paralysis follows the introduction of a wooden match so placed as to press upon the spinal cord of a guinea-pig. The pressure was continued a quarter of an hour, and the paralysis disappeared one hour after the pressure was removed.

Attention is directed to what occurs after a nerve has been tied:

1. Segmentation of the myeline and disintegration of the same.
2. Disintegration of the axis-cylinders.
3. Complete absorption of the mass, leaving the nerve-sheath empty or containing only *débris* and nuclei.

The nuclei of the perineurium and endoneurium aid in the transformation of the nerve into a band of connective tissue. Here, then, is a process the result of which is practically identical with that following compression of the cord—changes, degenerative in character, the result of the mechanical interference, followed by increase of the connective-tissue elements. Pathological views characterizing degenerative changes as inflammatory are by no means established.

In the endeavor to settle this point, Dr. O. Kahler * made certain experiments upon dogs. He injected bee's-wax about the spinal cord; motor and sensory paralytic symptoms followed in the lower extremities. At varying periods the cords were carefully examined. After the compression had lasted from *six to thirteen hours* he found slight nodular foci located in the posterior and lateral columns. Microscopical examination of the same revealed marked swelling of the axis-cylinders, disappearance of the myeline sheath—*no interstitial changes.*

Two to Ten Days.—Microscopical examination showed greater swelling of the axis-cylinders and destruction of the same, granular cells, slight increase of Deiter's cells.

Later, five weeks to six months, there were found nodules of sclerosis with marked thickening of the connective tissue. He claims to have found none of the characteristics considered by Leyden, Joffroy, Stricker, and Schultze as pathognomonic of myelitis, and concluded that the results were purely those of a mechanical lesion.

Kahler states, as in peripheral nerves so in the spinal cord a moderate pressure is enough to excite a break in conduction. A few fibers are destroyed in such cords, and we find lacunar changes distributed in the form of nodules.

Do the connective-tissue-growth changes which are usually found at the site of the compression lesion necessarily signify the inflammatory character of the lesion?

It is not denied that we usually find a sclerotic condition of the cord at the compression site when paralysis has existed for any length of time. A glance at the observations will make this conclusive. That such is the outcome of the lesion is beyond dispute. We contend, however, that the presence of sclerotic tissue in the cord is no proof that the initial lesion was inflammatory. We have seen that this follows various processes.

Ziegler says the increase of connective tissue is a result of every process of softening. The connective-tissue increase characterizes every process of degeneration. Throughout the nerve-centers destruction of nerve-tissue by processes degenerative or otherwise *is invariably followed by increase of the neuroglia.* The examination in the great majority of these cases is made long after the onset of the lesion. We find only the result of the process which has produced destruction. Leyden,* who came to look upon the lesion as identical with transverse myelitis, drew his conclusions almost exclusively from old findings, and these are identical with those following myelitis. Charcot's † case—where the disease was cured after one year's standing, and where, two years subsequently, death occurred, the cord at the compressed site being found smaller and presenting a sclerotic condition—does not seem to offer any great support to the theory that the difficulty had been inflammatory. Michaud himself offers but one case as the strong pillar of his argument, where interstitial changes were found at an early stage, and this case had not as yet given evidence of paralysis.

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* Ed. 1882, vol. i, p. 606.

* "Zeitschrift für Heilkunde," vol. iii, 1882, p. 187.

Erb ‡ says the fact that in not a few cases of compression of the cord the microscope reveals in the softened mass no granule cells, no hyperplasia of the connective tissue, no proliferation of the nuclei, but only swollen and disintegrated nerve-elements, speaks unmistakably in favor of the view that the process is sometimes one of simple softening.

Strümpell # contends that in repeated examination of cords compressed through spinal caries he has never found signs of inflammatory change. He refuses it upon pathological grounds, and believes that there is nothing found histologically that can not be accounted for as a result of a mechanical lesion. He says: "We must maintain, against the theory generally received at present, on the ground of many of our own investigations, that we have not the slightest reason to refer the occurrence of paralysis in spondylitis to a secondary myelitis. Such a 'compression myelitis'—that is, an inflammation of the spinal cord arising from the pressure as such—is to be rejected from general pathological reasons, and the microscopical examination of the cord also shows nothing which points to an inflammation or what may not be entirely the result of mechanical compression. If we make stained cross-sections of the hardened cord, we see under the microscope no signs of vascular changes, of hyperæmia, of accumulation of cells about the vessels, and only exceptionally a little traumatic hæmorrhage; but we do find, in addition to many still preserved nerve-fibers, other fibers which are involved in the disintegration, and evidence of those already destroyed. If the destruction of nervous tissue has advanced to a certain degree, there is in the later stages, as in all analogous processes, *a secondary implication of the neuroglia.* Now follows an increase of the interstitial connective tissue. Its proliferations, which take the place of the destroyed nervous tissue, seem diffuse at first, but later firm and fibrillary. Thus it happens that in old cases we find nothing at the point of compression but a loss of nerve-fibers in the cord, and in their place a *firm fibrous tissue.*"

What inferences can be drawn from a study of post-mortem findings? In the light of the present well-recognized value of post-mortem findings in settling pathological questions it would be a superficial study, indeed, in the present instance that neglected to consider them. From the literature of the subject those cases only are selected which have been reported with some attention to detail, for from such cases only is it possible to draw any reliable inferences. The cases are first cited and then analyzed.

Observation I.—Male, aged six years, with marked angular spinal curvature of eighteen months' duration, complicated with paraplegia which had existed for four months. Examination showed complete loss of voluntary power of both lower extremities; very little muscular atrophy; exaggerated reflexes even to the exhibition of spinal epilepsy. Died, seventeen months after the beginning of the paraplegia, from pulmonary complications.

Autopsy.—Partial carious destruction of the sixth, seventh, and ninth dorsal vertebræ, and complete destruction of the eighth. An abscess, the contents of which had degenerated into a white, cheesy mass, occupied the site. Pultaceous matter occupied the body of the eighth dorsal vertebra, and pressed upon the spinal cord.

Microscopical examination by Dr. E. C. Seguin showed *cord converted into connective tissue at the site of compression,* also above and below, the usual lesion of secondary degeneration.—Gibney, "The Illustrated Quarterly of Medicine and Surgery," April, 1882, p. 43.

Observation II.—Male, aged twenty-three years, complained for a short period of lancinating pains in the lower extremities, preceded by malaise and fever, and soon followed by complete paraplegia. The legs were flexed upon the thighs, and the latter upon the abdomen. Reflexes markedly exaggerated. Death occurred five weeks after the onset of the paralysis.

Autopsy.—Body of fifth dorsal vertebra completely destroyed by caries. The spinal cord was found compressed at the level of the fifth dorsal vertebra by a purulent mass which existed in the vertebral canal. Spinal cord showed *sclerotic changes at site of compression;* inflammation of pia mater involving spinal portion.—Mathieu, "Le progrès médical," No. 35, September 2, 1882.

Observation III.—Male, aged thirty-one years, complained for three months of a fixed pain in the region of the inferior angle of the left scapula. This was soon followed by a painful stiffness of the neck, together with marked atrophy of the infra-spinatus and deltoid muscles of the right side; later by atrophy and paralysis of muscles of both upper extremities. Died, five months after the onset of the lesion, from asphyxia.

Autopsy.—Cheesy osteitis, third, fourth, and fifth cervical vertebræ; "pachy. externe" limited to site of lesion, compressing same at height of fourth pair of cervical nerves through a cheesy proliferation which had broken through the dura mater.—Chantemesse, "Le progrès médical," No. 8, 1883.

Observation IV.—Male, aged forty-eight years, complained of occasional sharp pains in left arm, followed by weakness of both upper extremities and contraction of same. Lower extremities subsequently became weak, accompanied by a spastic condition of same. After ten weeks the lower extremities became completely paralyzed, with marked contracture. The upper extremities remained only partially paralyzed, with a high grade of atrophy of the thenar eminence of both hands; partial degenerative reaction of the atrophied muscles; otherwise normal electrical excitability, no fibrillary contractions, tendon reflexes increased only in lower extremities. The only disturbances of sensibility were slight pains and paræsthesia in the arms. Death occurred, seven months after the beginning of the disease, from sepsis.

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* "Klinik der Rückenmarks-Krankheiten," vol. ii, part 1st, p. 149.

† "Communication de M. Charcot à la Société de biologie," Sept., 1871.

‡ "Ziemssen," vol. xiii, p. 469.

"Lehrbuch der sp. Pathologie und Therapie der inneren Krankheiten," vol. ii, part 1st, p. 167.

Autopsy.—Beginning caries, fourth, fifth, and seventh cervical vertebræ, without deformity of same. External surface of dura mater presented the condition of "pachy. externe" limited to the site of the bony lesion, the medullary surface of the dura mater remaining smooth and intact.

The spinal cord at the site of compression was found *softened* in a marked degree and unfit for microscopical examination.—Kahler, "Prager medicinische Wochenschr.," No. 49, p. 480, 1883.

Observation V.—Female, aged six years, with a history of paraplegia of four years' duration; reflexes markedly exaggerated; no sensory disturbances. Under treatment the paralysis disappeared to a considerable extent, so that the patient could bear considerable weight upon the feet. Death occurred from embolic pneumonia.

Autopsy.—Caries of the seventh cervical and first five dorsal vertebræ, the bodies of same being hollowed out and filled with cheesy pus. The spinal cord included between the second and seventh dorsal segments, measuring about 7 ctm., is transversely flattened, and has an increased consistency. In this portion of the cord there is destruction of both the gray and white matter. The walls of the blood-vessels are thickened, and the anterior portion of the dura mater is thickened and contains calcareous deposits. The cord above and below the compressed portion shows the usual lesion of secondary degeneration.—Ridlon, "N. Y. Path. Soc. Rep.," "Medical Record," March 26, 1887, p. 361, and July 16, 1887, p. 84.

Observation VI.—The patient, a male, complained for some months of pain in the back, followed by paresis of the lower extremities, which soon became completely paralyzed; reflex movements exaggerated; no marked sensory disturbances in same.

Autopsy.—Partial destruction of the four upper dorsal vertebræ. The spinal cord was found compressed at the point opposite the second dorsal vertebra. At this point careful examination failed to detect any inflammatory evidence.—Kadner, "Archiv d. Heilk.," xvii, 6, p. 481, 1876.

Observation VII.—Male, aged forty-four years, November 10, 1875, seized with pain in chest, neck, and shoulders, accompanied by cough and dyspnœa. These symptoms were soon followed by paralysis of the lower extremities, rectum, and bladder; sensibility of lower extremities diminished and reflex movements increased. Died February 17, 1876.

Autopsy.—Caries of the seventh cervical and four upper dorsal vertebræ. Examination of the spinal cord *negative.* There was a marked purulent infiltration beneath the periosteum, some pus having found its way into the spinal cord. This was the only lesion to account for the paralytic symptoms.—Kadner, *loc. cit.*

Observation VIII.—Patient gave a history of stiffness of the neck, followed soon by a numb feeling in the arms, which extended up the arms over the trunk. Head, neck, and legs remained unaffected. Examination upon admission into the hospital at Stockholm elicited partial anæsthesia, most marked upon the right side in hands and fingers. There was also paresis of the lower extremities. The right side of the body became completely paralyzed. Patient died from failure of respiration.

Autopsy.—Caries second, third, and fourth cervical vertebræ, with subperiosteal blood effusion. At a point opposite the second cervical vertebra the spinal cord was found compressed by a portion of bone. The pia mater at point opposite second and fourth cervical vertebræ was injected, but there was no exudation. The spinal cord at same height was softened exactly where the piece of bone pressed. Small hæmorrhagic foci were found in the cord substance at the site of compression. —Malmsten, Schmidt's "Jahrb.," Bd. 171, S. 65.

Observation IX.—Patient, aged sixteen years, upon admission into hospital was found to have complete paralysis below the upper extremities, with marked anæsthesia of same; reflexes markedly increased. Died four months after admission.

Autopsy.—Body of sixth cervical vertebra almost totally destroyed by caries. A rough protuberance projected into the anterior part of the spinal canal at this point, narrowing it considerably. Dura mater shows the lesion "pachy. externe." Spinal cord at this point was found compressed and flattened. Microscopical examination not given.—Savory, "St. Barthol. Hosp. Reports," v, p. 45, 1869.

Observation X.—Male, aged sixteen years; voluntary movements of lower extremities completely abolished; no anæsthesia; electrical contractility normal; reflexes markedly exaggerated; absence of pain in the beginning of the disease, but later some pains of a lancinating character; pupils dilated, but they react slowly to light; function of bladder and rectum normal.

Autopsy.—Caries of the first four dorsal vertebræ. The *anterior columns* of the spinal cord were compressed at the site of the lesion, and found *softened* and *markedly anæmic;* the remaining portions of the cord are normal.—E. Rallett, "Wien. med. Wochenschr.," iv, p. 24, 1864.

Observation XI.—Patient, aged five years and a half, brought to the hospital with measles, complicated with capillary bronchitis. Examination of the spinal column showed an angular curvature at point of ninth and tenth dorsal vertebræ; no paralysis. Death occurred from the pulmonary disease.

Autopsy.—At the posterior surface of the diseased vertebræ a small pocket was found formed by the prevertebral cellular tissue, and filled with cheesy pus; the posterior ligament was found perforated at this point, and the contents were in contact with the anterior surface of the dura mater. The membranes appeared as though sprinkled with vegetations, forming plaques 4 to 5 ctm. square. Hardened sections of the cord showed *beginning myelitis.*—Michaud, "Sur la méningite et la myélite dans le mal vertébral," Paris, 1871, p. 66.

Observation XII.—Patient, aged two years, admitted to hospital November 9, 1869, with left hemiplegia, with rigidity. Later, the right inferior limb became paralyzed. The thighs were flexed upon the abdomen, and the legs upon the thighs. Nothing was observed abnormal with the right superior extremity, which alone could execute movements. Died April 2, 1870.

Autopsy.—Spinal cord at the site of the compression lesion due to caries showed marked evidence of sclerosis.—Michaud, *ibid.*, p. 68.

Observation XIII.—Female, aged thirty-four years, noticed, after birth of first child, at the age of twenty-five years, slight deformity of the spinal column, followed three months later by numbness in the lower extremities. Entered the Hôtel Dieu with complete paraplegia of the lower extremities, accompanied by contracture of same. The paraplegia continued for more than four years. Patient died from a complicating morbus coxarius, September, 1869.

Autopsy.—Upon opening the rhachidian canal, the dura mater was found covered with a grayish exudation, which caused it to adhere to the posterior face of the changed vertebral bodies. An osteoform projection compressed the spinal cord at the level of the third dorsal vertebra. The spinal cord at this point was found extremely *diminished in size and of about the size of a goose-quill.* Above and below, the cord regained gradually its normal dimensions. Microscopical examination showed sclerosis of cord, with ascending and descending degeneration.—Michaud, *ibid.*, p. 70.

Observation XIV.—Male, aged thirteen years, entered hospital Sainte-Eugénie, September 16, 1869, with dorsal angular curvature and complete paraplegia; moderate contracture of legs and thighs; sensibility to touch, temperature, and pain completely abolished; reflex movements exaggerated; function of bladder and rectum normal. Died January 29, 1870.

Autopsy.—Caries of the five lower dorsal vertebræ, the apex of the angular deformity being found by the tenth. Two of the vertebræ are completely destroyed; the osseous tissue is infiltrated with tubercle. The *dura mater* is thickened at the site of the disease, showing the lesion "*pachy. externe.*" The spinal cord at the site of the lesion shows well-marked evidence of sclerosis, with dislocation of one of the anterior horns.—Michaud, *ibid.*, p. 73.

Observation XV.—Male, aged forty-two years, admitted into the service of M. Vulpian at hospital La Pitié, March 31, 1870, complaining of severe neuralgic pains in the lumbar and epigastric regions. Examination revealed angular curvature of the spinal column at the junction of the upper and middle thirds of the dorsal region; analgesia of the lower extremities most marked upon the left side; sensibility to temperature very well preserved. Died January 18, 1870.

Autopsy.—The dura mater is considerably thickened at a point corresponding to the eighth and ninth dorsal vertebræ, and the latter present a condition of extreme friability as a result of caries; the posterior ligament is destroyed opposite the diseased vertebræ. The spinal cord at the site of the lesion does not offer a uniform alteration. Toward the superior part of the compressed segment are found tracts of sclerosis in the posterior columns following the course of the internal radical filaments. The corresponding nerve-roots present evidence of neuritis, with granulo-fatty change. At the lower part of the compressed segment is found a peripheral sclerosis, presenting a tendency to assume the annular form, most marked upon the lateral columns; the left lateral half of the gray substance is deeply changed. Above the site of the lesion is found sclerosis, which continues in the lateral columns up to the cervical region. —Michaud, *ibid.*, p. 74.

Observation XVI. — Infant, aged eight months, began gradually to lose power of the right arm, and subsequently of the left. After two months and a half, partial paralysis of the lower extremities. Died at the end of seven months after the onset of the disease.

Autopsy.—Caries of the sixth and seventh cervical vertebræ, opposite which point the cord seemed enlarged. This enlargement was due to tubercular infiltration, which at this point had caused complete absorption of the proper tissue of the cord. The tubercular mass seemed to have had its origin in the right postero and postero-lateral columns; then extended until the cord was gradually destroyed, only slight traces of the anterior columns remaining.—Gull, "Guy's Hosp. Reports," 1858, 3d series, vol. iv, p. 206.

Observation XVII.—Male, aged fifty-eight years, complained of backache for thirteen years, the pain being most severe in the lumbar region, thence radiating toward both sides; loss of power slowly developed in the lower extremities, which soon became completely paralyzed; reflex movements markedly exaggerated; severe muscular cramps.

Autopsy.—Caries of the sixth, seventh, and eighth dorsal vertebræ. At a point opposite the posterior surface of the body of the eighth dorsal vertebra the dura mater is thickened and adherent to the bone; the vertebral canal is narrowed at this point; the intercostal nerves in the vicinity of the diseased vertebræ are imbedded in thickened callous tissue. Above and below the site of the lesion the dura mater is normal. The *spinal cord* at the site of the lesion was compressed, and smaller than that above and below. *Microscopical* examination of the same revealed absence of a portion of the nerve-fibers; medullary sheaths destroyed in places; connective tissue increased; the nuclei were but slightly increased, in no place more than two or three being found together; little fat droplets and amyloid bodies also found.—Frommann, Virchow's "Archiv," Bd. 54, S. 42.

Observation XVIII.—Male, aged thirty-seven years, fell on the 10th of October, 1885, spraining his right hand; three weeks later complained of some pain in his right shoulder, and gradually his right arm became paralyzed. Examination showed paralysis of deltoid, brachialis anticus, and biceps muscles; sensibility of arm slightly diminished; hyperæsthesia over the region of the superior cervical nerve; pupils dilated. One year after beginning of the disease general emaciation, with very pronounced atrophy of the muscles of the right arm; less of the left. Finally, complete paralysis of both upper extremities and of the muscles of the neck, with moderate anæsthesia; paresis of legs, with increased tendon reflexes. Died November 14, 1886.

Autopsy.—Bodies of the third and fourth cervical vertebræ carious; intevertebral substance destroyed; the posterior ligament is bowed with the convexity toward the spinal cord, compressing same. *Spinal cord:* 4 to 5 ctm. of the cervical enlargement softened into a reddish pulp; the *meninges* are intact; fourth cervical nerve surrounded by pus.—Grasset and Estor, "Revue de méd.," viii, 2, p. 113, 1887.

Observation XIX.—Female, aged sixty years, admitted into Guy's Hospital, November 6, 1867, with complete paraplegia, which had been progressive from time of onset, three months previous; partial anæsthesia, but no pain. Died suddenly, ten days after admission, with symptoms of heart-failure.

Autopsy.—Third and fourth dorsal vertebræ partially destroyed by caries, with complete destruction of the intervertebral substance. At the site of the lesion a mass of softened material projected into the spinal canal, causing pressure upon the cord. Spinal membranes intact. Spinal cord diminished in size at site of compression and somewhat softened.—Ogle, "Trans. of the Path. Soc. of London," vol. xix, p. 16, 1868.

Observation XX.—Male, aged forty-one years, afflicted with caries of the middle dorsal region of the spine, complicated with paresis of both lower extremities; reflex movements markedly exaggerated. Died from phthisis complicating the carious disease.

Autopsy.—Caries of the fifth and sixth dorsal vertebræ and complete destruction of the intervertebral substance. At the site of lesion an abscess pressed upon the spinal cord. The spinal membranes were found intact, and the spinal cord presented no evidence of inflammatory change.—Ogle, *loc. cit.*

Observation XXI. — Male, aged forty-five years, complained, during year 1878, of stiffness of his neck which rendered rotation of same impossible. During the year a retropharyngeal abscess formed, which broke externally. Examination, January 1, 1879, showed rigidity of the upper part of the vertebral column, but no paralysis of upper or lower extremities. The only marked symptom aside from the rigidity of the muscles of the neck was profound atrophy of the *thenar eminence* and *interossei* of both hands.

Autopsy.—Posterior ligament in great part destroyed from the third dorsal to the superior cervical vertebræ; body of first dorsal and all the cervical vertebræ carious. Dura mater opposite diseased site shows the condition of "pachy. externe," the internal surface, however, remaining intact. The condition of "pachy. externe" extends laterally in the dura mater far enough to include the anterior and posterior spinal nerve-roots traversing same.

Microscopical Examination. — The anterior nerve-roots which form the brachial plexus show the degenerative lesion—proliferation of the nuclei, atrophy, and crowding together of the myeline and axis-cylinders. This same lesion is found in the nerves which supply the atrophied muscles. The posterior spinal roots appear normal.

Spinal Cord.—Several ctm. of the middle and inferior cervical segments show: *a.* Slight sclerosis of the direct cerebellar tract. *b.* The internal root-zones of the posterior columns show a sclerotic lesion similar to that of locomotor ataxia, which lesion is prolonged into the gray substance. The motor cells of the anterior horns are also somewhat atrophied, and the cells fewer than normal. No evidence of ascending or descending degeneration in the white columns usually found consequent to lesions of the cord.—Proust and Ballet, "Revue mensuelle," vol. iv, p. 425, 1880.

Analysis of the Findings. — In examining the cases which have just been cited, we are struck with the superficial manner in which some have been reported—so imperfectly reported in some instances, even by competent observers, as to render them almost worthless beyond giving a rough description of the gross findings. Yet, inasmuch as these are valuable to us, they have been included with those where the microscopical findings are also given.

Dura Mater.—The medullary surface is found intact in all observations excepting III and VII, which showed perforation of the dura.

Pia Mater.—In Observation VIII found injected, but unaccompanied by exudation; in the remaining cases *normal.*

Spinal Cord.—Observations I, II, V, IX, XII, XIII, XIV, and XVII show the spinal cord *converted* into *connective tissue* at the *site of compression.* This gives no clew to the pathology of the original lesion, since we have seen that connective-tissue growth is a result of a variety of lesions affecting nerve-tissue.

Softening of the cord at the compression site is found in Observations IV, VIII, X, XVIII, and XIX. In Observation VIII the cord was softened exactly where it was pressed upon by bone, and small hæmorrhagic foci were found in the cord substance—changes non-inflammatory, similar to changes already described, which experimental physiology tends to show take place in the cord as a result of compression. In Observation X the lesion was limited exactly to the anterior columns of the cord, and these were found *softened* and *anœmic*, the presence of the latter condition, as held by the observer, pointing to a non-inflammatory lesion. In Observation XIX, Ogle adds, with some emphasis, that the lesion at the site of compression was purely a mechanical one, as nothing indicative of inflammation was found. In Observations IV and XVIII the lesion may or may not have been inflammatory. A compression cause existed in the form of abscess products which compressed the cord. In both cases it is to be noted that the *meninges* were found *normal.* Observations VI, VII, and XX give no evidence of inflammatory destruction reported by such observers as Kadner and Ogle. In Observation XVI the cord tissue proper was found absorbed by the tubercular neoplasm. In Observation XI Michaud sums up the histological findings under the head of *beginning myelitis,* without detailing the formr.

If we carefully compare the findings in Observations XV and XXI, we will notice a marked resemblance and at once see that they differ materially from those histological changes usually met with at the site of compression. While no paralysis existed in either case, it is deemed best to refer to them here, inasmuch as they have been thought by some authors to indicate the early lesion of so-called "compression myelitis." In Observation XXI, especially, we notice that the lesion is confined to definite tracts in the spinal cord—viz.: the posterior root-zones or columns of Burdach and gray matter adjoining, the direct cerebellar tracts, the anterior horns and nerves originating from the latter. How is such a lesion to be explained? Proust and Ballet were inclined to accept the following hypothesis: Irritation of the posterior nerve-roots excited inflammation of the posterior root-zones, which inflammation extended from thence to the parts of the cord found implicated—in other words, an *ascending neuritis.* Kahler,* in commenting on this case, calls attention to a fact which we have also observed, that usually in cases of lower cervical caries giving rise to symptoms similar to those enumerated, the reflexes of the upper extremities are preserved even when the atrophy is quite profound, and correctly infers that such phenomena are quite inconsistent with a neuritic disease of the cervical nerve-roots.

The distribution of the pathological findings to rather definite tracts of the cord argues a lesion having a definite cause and progressing in a definite order. The following hypothesis would seem to offer a satisfactory explanation: The lesion is twofold in character: 1. Alteration of the posterior root-zones and direct cerebellar tracts due to a degenerative lesion, the result of implication of the sensory roots at the site of *pachy. externe.* 2. The changes in the anterior horns are believed to be the direct result of moderate compression of the cord, and the degeneration of certain of the anterior nerve-roots necessarily secondary. The preservation of the reflexes in these cases renders it conclusive that the spinal-cord substance itself is primarily involved. Even here, then, there seems to be nothing which a mechanical lesion will not readily explain.

We may add, Is there, even in those cases where the sclerosis is said to have an irregular distribution at the compressed site, anything especially incompatible with the theory that such changes are but later stages of non-inflammatory foci, induced by moderate compression of the cord? That such is the case is rather corroborated by Kahler's experiments, already dwelt upon in an earlier part of this paper.

To briefly summarize, then, we have shown:

1. That we have present a simple mechanical pressure in the form of *abscess products,* thickened *dura,* or *bone.*

2. That the inflammatory process is invariably a limited one, the inflammation of the dura mater being limited exactly to the site of the diseased vertebræ, exhibiting no

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* Kahler, "Prag. med. Woch.," viii, No. 49, p. 480.

tendency to extend in the membrane—nature's medullary protection.

3. That the *medullary* surface of the dura mater is almost invariably normal.

4. It follows, then, that the pressure lesion is simply mechanical, possessing no tendency to involve the spinal cord through any inherent specific characters of the carious process—a bland mechanical lesion—and the damage it inflicts commensurate with the pressure exerted.

5. That examinations of the pathological findings have, in the vast majority of cases, necessarily been confined to old cases where the lesion had existed for a very considerable period, and that such examinations usually revealed the cord largely converted into connective tissue at the site of compression.

6. The presence of sclerotic tissue at the site of compression is no evidence that the original lesion was of an inflammatory character, since it is a well-established pathological law, to which we have alluded, that throughout the nerve-centers destruction of nerve-tissue, by processes degenerative or otherwise, is *invariably followed by increase of the connective tissue.*

7. Experimental physiology gives no evidence of an inflammatory lesion following experimental compression of the cord, microscopical examination of the same showing a few granular cells, swollen axis-cylinders and evidence of destruction of the same, foci of traumatic hæmorrhage—changes identical with those observed by Strümpell, Kahler, and others, at the site of recent compression of the human spinal cord. We do not find signs of vascular changes, of hyperæmia, of accumulation of cells about the vessels, and in the connective tissue; in other words, no evidence of those pathological changes which are considered by Leyden, Joffroy, Stricker, Schultze, and others as pathognomonic of inflammatory change.

8. A careful examination of the pathological findings of reported cases reveals to us, in the light of recent pathological knowledge, but few instances where we have reason to believe the original lesion to have been inflammatory. These were cases where the process was virulent, leading to a perforation of the dura mater, thus allowing the purulent products to come in direct contact with the cord, giving rise to a lepto-meningitis.

Finally, then, our researches have led us to conclude that the original lesion is, as a rule, non-inflammatory, and we have endeavored to demonstrate this from a pathological standpoint, support it by experimental physiology, and corroborate it by clinical manifestations.

We must await further researches in neuro-pathology to clear away certain obstacles which we recognize exist. When the pathology of the so-called combined sclerosis is thoroughly understood, together with all the facts pertaining to the physiological and pathological rôle played by the posterior root ganglia and the vascular mechanism of the cord, it will doubtless be possible to complete the pathological picture of this peculiar form of paralysis, and establish as certainties what at present exist but as probable hypotheses.

48 EAST TWENTY-SIXTH STREET.

TRACHEOTOMY WITHOUT THE CANNULA.

BY THOMAS ADDIS EMMET, M. D.,
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THE patient would be spared great discomfort after the operation of tracheotomy if the use of the tube could be dispensed with; moreover, a source of irritation would be removed which by its presence retards the healing process and increases the danger from blood-poisoning.

My thoughts have been recently directed into an old channel by reading the medical reports issued from time to time on the condition of the Emperor of Germany. It has been evident that the instrument in his case has been a constant cause of discomfort while in place, and the usual difficulty attending its insertion or change has been experienced.

This subject has not come within the scope of the line of practice with which the greater part of my life has been identified, but in earlier years my experience with the operation of tracheotomy was unusually great. One of my first literary contributions to the profession was an article on "Œdema Glottidis resulting from Typhus Fever," which was published in the "American Journal of the Medical Sciences," July, 1856. I was directly or indirectly the means of saving the lives of some twenty persons by performing tracheotomy where passive œdema of the glottis had taken place.

At a later period I saved the lives of two children, now grown, on whom I operated for membranous croup. One of the first difficulties I experienced was in the management of the cannula. In the treatment of some of the adult patients I dispensed with the use of the tube entirely, and kept the wound open by means of a thick lead wire passing around the neck. This could be bent to avoid pressure on the vessels, and, through a hole in each end of the wire, a silk suture was secured, which had been passed through the skin and edge of the tracheal wound on each side, and thus the opening was kept patulous.

With both children I used a long silver wire, passed through the skin and trachea, which was so adjusted and twisted sufficiently as to turn the edges of the skin over into close contact with the edge of the opening in the trachea. To avoid making pressure on the vessels, I placed on each side of the neck two corks into which I had made deep cuts to imbed the wire, and, after making the necessary traction to separate the sides of the wound, the ends of the wires were twisted together behind the neck.

A great improvement has doubtless been made in the cannula since the treatment of these cases, but the instrument can never be so perfected that its presence in the trachea will cause no irritation.

The strip of muscular tissue which is inserted, as it were, in the posterior wall along the line of the long axis of the trachea and between the ends of the cartilaginous rings, is exceedingly sensitive to the touch of a foreign body. Muscular contraction can be excited, and often a paroxysm of coughing brought on by the pressure of a probe. When this contraction is brought about, the diameter of the trachea must be proportionately diminished. Through the action of the reflex system the irritation must be transmitted to the minutest bronchi, so that the capacity of the air-passages becomes greatly lessened as a consequence. Until the wound has healed, it is impossible to prevent the discharges from its surface entering the trachea. The healing process is retarded and the discharge is greatly increased from the irritation of the tube, while its introduction is always attended with difficulty, and with more or less damage to the soft parts.

I believe that it will prove good surgery and a comparatively easy matter to obtain early union between the edges of the skin and the lining membrane of the trachea, and at the same time to preserve the necessary opening into the air-passage. This assertion is based upon my experience in treating diseases of the bladder and urethra in the female, where it is now easy to establish a permanent opening for drainage in chronic cystitis, and in making the "buttonhole" opening in the urethra, by uniting with interrupted sutures the mucous membrane of the bladder or of the urethra with the mucous membrane of the vagina. If an early union can be obtained in such friable tissue, so prone to inflammatory action, and with a constant stream of urine flowing over the parts, we may infer that the skin can be made to unite around the opening in the trachea with even less difficulty. An oval opening should be made in the trachea by removing a small portion of tissue on each side, and this can be readily done by the aid of a tenaculum and a pair of curved scissors. A fine needle, about half an inch in length—such a one as I employ for operations about the bladder and urethra—would answer for the introduction of the interrupted sutures around the opening in the trachea. The first suture should be introduced about the middle of the wound on each side, and the others in turn toward each end, using about five to the inch. After they have all been secured, there would necessarily remain at each end a fold or pucker, since the opening in the skin would be much greater than the one in the trachea. This line should also be closed by fine interrupted sutures, but it would be necessary to include more of the deeper tissues than would be advisable where union of the skin and mucous membrane was desired. A fine silver wire should be used, and this may be introduced by means of a short silk loop attached to the needle. A metallic suture for a case of this kind would be preferable to silk, as it would not excite a local inflammation by being retained an indefinite time. It could also be utilized, by being bent, to act as a splint in giving form to the flap, and the discharges would not follow its course, by capillary attraction, to enter the trachea.

After twisting the wire sutures just sufficiently to bring the parts together, each should be cut off about an inch in length. If properly laid down, they will radiate, as it were, from a common center and lie flat, without producing any irritation.

The success of the operation will necessarily depend on the dexterity of the operator in being able to catch up the skin and subcutaneous tissue so that it will slide over the raw surface, and thus turn in the edge of the skin in close approximation to the edge of the tracheal mucous membrane. After operating on the children I was surprised at the time when noticing the rapid healing of the edges in comparison with other cases. Only a single stitch was used on each side, but even this was sufficient to cover in a great portion of the surface which would otherwise have been left to heal by granulation.

If the details attending the introduction of these sutures are properly carried out, with the necessary care which should be employed in closing any wound, union should promptly take place, and in the shortest possible time. A portion of the line in direct contact with the edge of the skin and trachea may possibly have to heal by cicatrization, but it would be very limited, and the surgeon could readily keep the granulations in check. The procedure as proposed would certainly reduce the cicatrizing surface to the minimum.

If only the skin, and not the deeper tissues, is brought together, the smallest diameter of the passage would be at the entrance to the trachea, and this diameter could not be encroached upon from without. If the union by cicatrization should be as limited in extent as is maintained, the trachea will be left far more movable than under ordinary circumstances where the parts have been healed by granulation. The small portion of the tracheal tissue which it seems advisable to remove from the edge will offer no obstacle to the final closure, but the opening would remain a mere slit, which could be securely covered by denuding an elliptical surface on the skin, which would be brought together in a fold over it.

SOME SURGICAL LESIONS OF THE ABDOMINAL VISCERA,

*WITH ILLUSTRATIVE CASES.**

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From the cases of lesions of the abdominal viscera which have come under my observation within a year I have selected twelve to report. While not all of my cases for the period embraced, this list contains all the fatal results.

The great interest attaching to abdominal surgery at this time has determined me to present this group of cases for your consideration:

Three cases of exploratory laparotomy (no further operation), all of the patients recovered; one case of purulent peritonitis, fatal; two cases of perityphlitis, one patient recovered; three cases of intestinal obstruction, one patient recovered; one case of gunshot wound of the abdomen, fatal; one case of nephrectomy, fatal; one case of nephrotomy, the patient recovered. Six recovered and six died.

To this I shall add some remarks upon "*intestinal suture*" from a successful case of exsection of a portion of the small intestine which I reported in full to another society.

Case I. *Exploratory Laparotomy; Sarcoma of Iliac Fossa; Recovery.*—S. M., a native of Russia, a peddler, twenty years old, was admitted to Mount Sinai Hospital July 21, 1887. Five days before admission the patient was seized with pain in the abdomen, followed by vomiting, headache, and dizziness. He supposed the trouble resulted from overloading the stomach with unripe fruit. His family history was negative. Temperature, 100·2°; respiration, 24; pulse, 72. On examination, the urine was normal. Lungs, liver, and spleen negative. Slight fullness in the right iliac region, in which, on palpation, a sausage-shaped swelling was recognized. The patient was put to bed and given milk and liquid diet.

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* Read before the New York Surgical Society, May 8, 1888.

On September 22d, under ether narcosis, I cut into the abdomen, by the incision in the median line below the umbilicus, in the effort to determine the exact nature of the mass. A hard, irregular oval tumor measuring about eight by five inches occupied the right iliac fossa, dipping up toward the kidney and extending well to the linea alba near the incision. It was adherent to the iliac fascia, cæcum, and mesentery, and could not be removed. The wound was closed and the patient rapidly recovered from the operation, but died two months later from the progress of the neoplasm. Autopsy, sarcoma.

Case II. *Exploratory Laparotomy; Sarcoma of Left Iliac Fossa; Recovery.*—Edwin B., male, eleven years old, was brought to me by Dr. J. H. Blanks, of Meridian, Miss., in September, 1887, with this history:

He had been a healthy child up to one year ago, when he complained of a pain in the left iliac region, where a small lump was recognized by palpation. About this time he had several chills, with high febrile movement, which were thought to be due to malaria, and which yielded temporarily to free doses of quinine. The boy's health gradually failed and the tumor enlarged. Dr. Blanks suspected a malignant neoplasm, but brought the child to this city for further advice.

Examination without an anæsthetic revealed a tumor seemingly attached to the iliac fascia and projecting forward against the abdominal wall. We gave an opinion that it was sarcoma, and probably could not be removed. Under chloroform narcosis the abdomen was opened directly over the mass. A sessile tumor about four inches in diameter was attached by its broad base to the fascia in front of the iliacus and psoas muscles, and straddled the iliac vessels. As removal was impossible, the wound was closed. The boy recovered promptly and is still living, seven months after the operation. The tumor is growing, and I am informed a fatal issue is near at hand.

Case III. *Exploratory Laparotomy for supposed Pyloric Stenosis; Recovery.*—Mrs. C., thirty-four years old, a native of Nova Scotia, came under my observation through the courtesy of Dr. R. M. Cramer, of this city, in October, 1887.

Her family history was good. Her personal history was good up to July, 1886, when she noticed a feeling of considerable distress after eating which would pass away in a few hours. These attacks became so aggravated in the course of the next few months that her physician was led to suspect a malignant growth at the pylorus. In January, 1887, she had scarlet fever, remaining confined to bed until June. In September she sought advice in Boston, remaining two weeks in a hospital. The patient states that the diagnosis of her family physician was corroborated. She consulted Dr. Cramer in October, 1887. At this date she was pale, emaciated, and extremely weak. Had no desire for food, vomited more or less every day, occasionally streaked with blood. Nausea constant, pain almost continuous and severe, referred to the pylorus. No tumor could be recognized. A laceration of the cervix uteri was discovered, the left tube was slightly enlarged, the right ovary was bound down.

For several weeks a tonic and stimulating treatment was followed, but without apparent benefit. Nourishing enemata were employed, and only small quantities of liquid food given by the stomach. The vomiting had continued.

In November, 1887, I saw the case with Dr. Cramer. It was determined to advise an exploration in order to render a diagnosis positive, to which the patient eagerly assented. Under chloroform narcosis this was done, preparations being made for dilatation of the pylorus should stricture be found, or gastro-enterostomy if cancer was present. A careful examination showed no lesion of the pylorus, nor of the stomach which could be recognized from the outside. The wound was closed and the patient recovered rapidly from the operation. Three weeks later Dr. Sims operated upon the cervix uteri successfully. The patient steadily improved from this time, and four months later declared herself fully restored to health.

Case IV. *General Purulent Peritonitis; Operation; Death.*—F. B., twenty-eight, a native of Austria, a housewife, was admitted to Mount Sinai Hospital December 3, 1887.

Twelve days before, after straining herself by lifting a heavy weight, an old hernia, which had descended on several other occasions and returned, appeared, and could not be reduced. Pain was present in the abdomen at once, and vomiting occurred within a few hours after the accident. She had vomited at intervals ever since the tumor was observed. For the last day or so the nausea and vomiting were much more severe and there was great pain over the abdomen, with general swelling.

At the time of admission the abdomen was very tense and there was some tympanites. There was a tumor in the right inguinal region about two inches in diameter to which a slight impulse was imparted on coughing. The patient was in a condition of great prostration, pulse almost imperceptible at the wrist, heart-beat irregular, extremities cyanotic. Temperature 103° in the rectum. A diagnosis of general purulent peritonitis from strangulated hernia was made. Operation was immediately undertaken. Ether was sparingly administered, and the patient constantly stimulated with hypodermics of whisky.

In cutting down upon the swelling the sac was opened and considerable pus escaped. No intestine was found and no fæcal odor. The opening into the cavity of the abdomen was found and enlarged with scissors, giving escape to a large quantity of liquid, purulent in character, with numerous large flakes of lymph. The cavity of the peritonæum was irrigated with Thiersch's solution heated to 105° to 110° F., until it flowed out clear and free from all particles of lymph or pus. Two soft rubber tubes were inserted, one into Douglas's *cul-de-sac* and a shorter one for superficial drainage. The wound was closed with silk sutures, and stimulants ordered to be continued at intervals, and the abdominal cavity to be irrigated every two hours with warm Thiersch's solution. The patient did not rally, and died six hours after the operation.

The hernia was no doubt composed of omentum, which had become strangulated and gangrenous, communicating a general peritonitis.

Case V. *Perityphlitis; Operation.*—T. W., clerk, twenty-five years old, came under my observation June 14, 1887, by courtesy of Dr. Buckley, of Manchester, Conn. His family history was good. Five years ago the patient had what was described as a "severe attack of inflammation of the bowels." Ever since there had existed a tenderness in the right iliac region. One year ago this pain became greatly exaggerated, and since that time had caused him to "favor" that side in moving about. At the time I examined him there was decided tenderness on pressure and a well-marked induration and swelling in the right iliac region. His general condition was not good. His health and strength had never been restored since the original attack, and lately he had had occasional rigors, with exacerbations of temperature followed by profuse sweats. Temperature, June 14th, 99°. Bowels constipated. The diagnosis was abscess, the result of old perityphlitis.

On June 15th I made an incision in the right ileo-lumbar region, and, keeping behind the peritonæum, opened into an old abscess, from which some pus and broken-down tissue were removed. The cavity was immediately behind the cæcum and beginning of the ascending colon, the walls of which were involved in the process of chronic inflammation, which existed. Irrigation was done with Thiersch's solution, and two soft rubber drains were inserted.

June 16th.—The patient was comfortable; temperature, 99·5°.

20th.—A profuse fæcal discharge occurred through the wound.

28th.—The patient was sent home to be treated by his physician. The fæcal fistula persisted, and on January 11, 1888, six months after I last saw him, he revisited this city.

The fæcal discharge had at one time almost ceased, but after a fit of coughing became again profuse. Several sinuses existed in the region of the old incision, and on January 13th these were laid open. A small opening about four lines in diameter still persisted in the large intestine. Since I last saw the patient, consolidations in the upper portions of both lungs had occurred. Microscopical examination of the sputa demonstrated numerous bacilli of tuberculosis. Patient returned to Connecticut on February 18th, and died from exhaustion due to the fistula and tuberculosis six weeks later.

Case VI. *Perityphlitis; Recovery.*—Louis G., twenty-four years of age, clerk, was attacked suddenly with pain in the abdomen, September 2, 1887. His bowels had moved on the previous night and early on the morning of this day. Prior to this date he had had several attacks of intestinal catarrh. Dr. S. Henry Dessau, who was called to the patient and to whom I am indebted for the history of this case and the privilege of reporting it, prescribed rhubarb as a laxative and ordered a sinapism over the abdomen.

On September 3d the pain was limited to the right iliac fossa; temperature 100°, pulse 84, respiration 16. Administered hypodermic of sulphate of morphine, gr. ¼, with sulphate of atropine, gr. $\frac{1}{120}$, and ordered gr. ij sulphate of quinine, with gr. ¼ sulphate of morphine, to be given *per os* every four hours; ice-bag to the seat of the pain; milk diet.

September 4th.—Tenderness increased and tympanites, presenting slight increase in temperature to 102°. Treatment continued.

No marked change occurred to September 10th, the ninth day of attack, when I was asked to see the case with Dr. Dessau.

Examination revealed an apparent swelling in the right iliac fossa. While the abdominal wall on the left side was normally soft and yielding under pressure, there was well-marked muscular resistance over the ileo-cæcal region. Tenderness was elicited on deep pressure over the iliac fossa. The temperature was between 100° and 101°. Tympanites had disappeared. It was decided that operative interference was not yet called for. The patient's condition continued about the same until five days later (the fourteenth of his attack), when, after an enema, the bowels moved freely. This was the first discharge in five days. The temperature shortly afterward fell to the normal, and the patient recovered rapidly.

Dr. Dessau informs me that two months later the patient had a second attack, milder in character, lasting five days.

Case VII. *Appendicitis with Peritonitis and Occlusion of the Ileum; Operation; Death.*—R. M., twenty years of age, a milliner, born in New York city, in good health up to Friday, January 13, 1888. She was at this time seized with headache, pain referred to the region of the stomach and umbilicus, with occasional eructations and tenesmus, which last symptom was not relieved by a moderate stool on Friday night. Two days later (Sunday, 15th) she was visited by Dr. George W. Rachel, to whom I am indebted for these notes. He learned that on several former occasions she had suffered from constipation, but had never been forced to take cathartics to get relief.

When examined by Dr. Rachel, at 4 p. m. on Sunday, the abdomen was somewhat swollen; there was tenderness on pressure over the lower portion of the belly. The nausea was less than when she was first taken ill, and the eructations had ceased. Pulse 100 and fairly strong. Opium was prescribed. On the morning of Monday (16th) nausea was increased. A small quantity of thin fæcal matter had passed *per rectum.* During the afternoon she began to vomit. The greenish matter ejected had no stercoraceous odor. The abdomen was more swollen and tender, and over the right iliac area dullness was perceptible. In order to relieve the vomiting and to induce peristalsis, Dr. Rachel washed out the stomach several times and administered a copious enema, which had no effect.

A consultation was now asked for, and the attending and consulting physicians advised operative interference. In the mean time a second physician was sent for, and, on further consultation, drastic cathartics were freely administered. By the next morning no evacuation had occurred, and the attendant urged an operation, which was deferred until the afternoon, when, at the request of the family and the physicians, I visited the patient. She was lying on the back with the thighs flexed on the abdomen. The pulse was 120, temperature 102°, and respiration above the normal and costal in type. She was rational, yet evidently impressed with the gravity of her situation. Tympanites was well marked though not extreme, the resonance being somewhat emphasized on the right half of the abdomen. Vomiting occurred at intervals during the examination, and was of greenish color and intestinal odor, not fæcal. No evacuation had occurred from the rectum since the scanty discharge on Monday morning, thirty-six hours before.

Despite the tympanites, on palpation there was readily made out a resistance on the part of the muscles in front of the ileo-cæcal region not present on the opposite side. The muscular wall of the abdomen on the left side could be depressed with slight inconvenience to the patient, while on the opposite side the resistance was so great that no idea of the contents of the peritoneal cavity could be obtained. The symptoms pointed to intestinal occlusion at or near the ileo-cæcal junction, and this diagnosis was agreed upon by all. Local peritonitis was evident. Although the condition of the patient was desperate, I advised laparotomy and the rapid establishment of an artificial anus to relieve the urgent symptoms of obstruction. As no operation was possible in the hovel in which the unfortunate patient was lying, stimulants were administered, and she was carried into the operating-room of Mount Sinai Hospital. The operation consisted of an incision in the linea alba below the umbilicus, in length five inches. The small intestine presented as soon as the peritonæum was incised. It was distended to twice its natural size, and its wall was injected to a degree I had never before observed. The color varied from dark red to a bluish brown. I allowed it to escape into wrappings of warm Thiersch towels and rapidly sought for the point of obstruction, which was found within a few inches of the ileo-cæcal junction. The gut was now opened at a point one foot above the seat of occlusion by a longitudinal incision one inch in length. Several pints of dirty fluid escaped, which allowed the intestine to collapse. The various loops were returned, the wound in the abdomen closed to within one inch of the lower angle, to which the edges of the opening in the gut were stitched. The operation lasted about thirty minutes. The patient did not rally from the ether, dying three hours later. The autopsy disclosed an inflammation of the appendix vermiformis with almost a perforation by a grape-seed. Just where the seed was about to project through the wall of the appendix the inflammatory process had spread to a contiguous loop of the ileum, binding this to the appendix, while a second loop had also become adherent, thus causing a complete occlusion.

Case VIII. *Obstruction of the Transverse Colon by a Band; Symptoms of Perityphlitis; Peritonitis; Operation.*—H. H., male, fourteen years old, in good health, was suddenly, on the evening of April 12, 1888, seized with violent pain in the stomach. His bowels had been regular up to this date. On the next morning, after a sleepless night, he vomited several times after a moderate breakfast. The pain continued with diminished intensity for the next two days, and, although not seen by a physician to make a record of the temperature, it was evident that for three days there had been some fever. The bowels moved each day.

On April 15th (third day) he was seen by Dr. W. T. Alexander, who kindly gave me the notes of the case. Temperature, 102° in the mouth; pulse, 110; tongue natural; dorsal decubitus with legs extended; respirations somewhat increased in frequency. The patient complained of pain over the region of the pylorus, radiating down the right side to the right iliac fossa. There was no pain or tenderness over the left side of the abdomen. There was marked muscular resistance over the abdomen, especially on the right side, with tympanitic resonance; less marked over the right iliac fossa. No tumor was discovered. The patient was placed on milk diet, opium to relieve pain, and a poultice was applied to the abdomen. During the afternoon of this day the temperature was 104°, pulse 120. Acetanilide, gr. v, was given. Was fairly comfortable while quiet, but any movement caused pain. An enema was given, which brought away a few hard lumps. Opium continued. Cold applications to abdomen.

I saw the patient with Dr. Alexander in the afternoon. Temperature 105·5°, pulse 130. Dullness well marked over the right iliac fossa, and up in the line of the ascending colon. Tympanitic resonance was present over the remainder of the abdomen. Urine moderate in quantity and dark in color. Respiration accelerated and costal in type. Dr. Alexander and I agreed, after consultation, that we had a case of perityphlitis, with rapidly formed abscess, to deal with, and limited peritonitis. It was decided to give the patient acetanilide, gr. v, every four hours until the temperature fell, and to operate on the next day if the threatening symptoms did not in good part disappear. On the 16th (fifth day of illness), at 3 p. m., under chloroform narcosis, I examined the patient. A well-defined mass was easily made out, occupying accurately the right iliac fossa, and extending in the line of the colon upward for six or seven inches. Percussion was dull over this area. An incision was made parallel with and about one inch above the outer third or half of Poupart's ligament, and extending obliquely beyond the crest of the ilium. The peritonæum, somewhat injected yet not materially thickened, was stripped from the retroperitoneal tissues until the mass was reached. There were no adhesions or other evidences of pus formation. The tumor gave way under pressure with the finger, and was evidently composed chiefly of rather soft fæcal matter lodged in the caput coli and along this canal. A medium-sized aspirator-needle was introduced about one inch beyond the deepest portion of the wound, behind the cæcum, near the location of the appendix, where to the touch there seemed to be a slight thickening of the tissues. Upon withdrawing the piston, about two drops of fluid appeared in the cylinder. This was discolored by blood. We were not certain that it was pus. The needle had been left full of carbolic-acid solution (five per cent.) to prevent the entrance of air, and this fluid, with a small quantity of blood, would account for the contents of the cylinder. It had no odor. A second effort in the same location was negative. The needle was introduced one inch nearer the diaphragm, and evidently entered the colon. Not feeling justified in making any further dissection in the direction of the peritoneal cavity, two soft rubber drainage-tubes were inserted, and an aseptic dressing applied. It was decided, if no improvement followed this operation, to do a laparotomy within the next two days.

On the morning of the 17th there was slight improvement in the symptoms; but the temperature again went up in the afternoon, and in the evening was 104°. Dr. Alexander thought the peritonitis was extending, and on the next day, the 18th (seventh of attack), the peritonæum was opened. The tubes were removed from the former incision, it was irrigated with sublimate, and packed with sublimate gauze. No discharge had occurred from this wound. The incision through the abdominal wall extended from a point one inch above the junction of the middle and outer third of Poupart's ligament directly upward to a point one inch below the level of the umbilicus. Upon dividing the peritonæum, the small intestines, greatly distended, were with difficulty kept from protruding through the wound. By the use of flat sponges they were pressed back. The ascending colon and caput coli were about half full of fæcal matter and distended with gas. The transverse colon was enormously distended as far as the linea alba. Peritonitis was not general, the inflammation being confined to the right iliac region and along the colon. The appendix was distinctly made out by the finger; was empty and normal. There was no sign of pus anywhere. The great distension of the intestines suggested obstruction, and, carrying my hand into the abdominal cavity along the line of the transverse colon, a strong, narrow band was felt coming from above downward across the transverse colon and occluding this canal. The band was divided, and the gas immediately escaped toward the rectum, causing marked collapse in the colon on the central side of the obstruction. I next made a thorough irrigation of the peritoneal cavity with Thiersch's solution, heated to 105° F., and closed the wound. This second operation lasted an hour. On account of the great weakness of the patient, only a small quantity of chloroform was employed, while whisky was administered by the skin at intervals. He did not fully react, and expired nine hours later. The parents refused our request for an autopsy.

Case IX. *Intestinal Obstruction; Recovery.*—D. D., thirty-two years old, a native of Germany, a salesman, came under observation on February 4, 1888. His family history was good. Fourteen years ago the patient was thrown from a horse, sustained compound fracture of the foot, and was laid up several months. On getting up and about, he felt pain in the left groin, which was increased by coughing or straining. He was told he had hernia, and a truss was ordered. Had worn the truss constantly when not reclining. He had experienced no pain since the instrument was applied.

On January 30th his bowels moved naturally and freely. On February 1st, without apparent cause, he felt a sharp pain in the abdomen, chiefly referred to the region of the umbilicus. An enema was given that night, followed by a good stool. Morphine was prescribed to relieve pain. On February 2d vomiting occurred, and was repeated at intervals. There was no movement from the bowels. Dr. Cosby, who had the patient in charge, called Dr. Janeway in consultation. Intestinal obstruction was suspected. The bowels did not move in forty-eight hours. At repeated intervals he vomited discolored matter, which was supposed to be stercoraceous. Nothing could be retained in the stomach.

On February 4th I was asked by the attending physicians to see the patient. The temperature was 99·2°; pulse, 70;

respiration somewhat accelerated, and in great part costal in type. The abdomen was much swollen and tympanitic everywhere. Pain was dulled by morphine. No hernia could be recognized in the inguinal or femoral regions. The finger passed well into the left inguinal canal. The vomiting was of less frequent occurrence. The patient was not alarmed at his condition. I advised a postponement of operative interference, but made immediate preparations for this, so that when the symptoms justified it no delay should occur. As no operation would be allowed in the house, he was at once removed to a room in Mount Sinai Hospital. Ice and champagne were administered and retained. On arriving at the hospital, the temperature was 99°, pulse 72. Still markedly tympanitic, notwithstanding gas had escaped by the rectum.

February 5th.—Condition not changed, except that vomiting had ceased. Patient had eructations of gas. At 9 P. M., placing the patient in the knee-shoulder position, a large enema of warm water was administered. A part of this escaped shortly after the tube was withdrawn, but the greater portion was retained. Several hours later a small quantity of fæces escaped.

On February 6th a free discharge of fæces occurred, all symptoms of obstruction disappeared, and the patient made a good recovery.

Case X. *Gunshot Wound of the Abdomen.*—On July 11, 1887, at 5 o'clock P. M., P., sixteen years old, a strong, healthy lad, while standing erect, was wounded by a 38-caliber rifle-ball, discharged at a distance of about fifteen feet. The ball entered two inches above the crest of the ilium on the right side, about two inches and a half to the right of the spines of the lumbar vertebræ, and passed out one inch below and to the left of the umbilicus. External hæmorrhage was insignificant. The patient was seized immediately with violent pain and was prostrated with shock, which lasted for five hours. At this time he rallied, the pulse became full and normal, and for five hours he was free from pain, temperature, or any evidence of peritonitis. At 3 A. M. the following morning (July 12th) symptoms of peritonitis appeared, with increasing tympanites and elevation of temperature. Opium was prescribed by the physician in attendance. I was sent for at 9 A. M. of this day, and the first train for the patient's residence arrived at 1 P. M. I found him with pulse 140, temperature 104°, respiration rapid. The abdomen was tympanitic and greatly distended, the patient wild with delirium. Operation was out of the question. Death ensued two hours later. An autopsy was not allowed.

That the intestines were perforated there can be no reasonable doubt, both on account of the direction and path of the missile, and from a study of the symptoms.

Case XI. *Nephrectomy for Medullary Carcinoma; Death.*—Miss D., thirty-seven years old, came under my care through the courtesy of Dr. McWilliams, of this State, in May, 1887. While never robust, she gave a history free from serious illness to within five years of this date, at which time she was seized with a severe pain referred to the region of the left kidney and ureter. The first attacks were supposed to be due to renal calculi, but no concrete particles were ever discovered in the urine. The seizures returned at intervals varying from a few days to four or five weeks, caused intense suffering and considerable prostration, but in a few days after each paroxysm she would be up and about, resuming her household duties. It was noted by Dr. McWilliams that the urine was more or less bloody with the paroxysm, the blood disappearing a few days after the attack. About three years after the first seizure the patient, while in the upright posture, suffered so severely from soreness and a sense of dragging or weight in the left side of the abdomen that she took to bed, in which condition she was conveyed to this city in May, 1887.

To the date on which she went to bed no tumor was noticeable, although careful examination was made by her physician. On examination, the patient was found to be fairly well nourished, considering the protracted nature of her illness, the two years' confinement to bed, and the necessity for the not infrequent recourse to morphine for relief from suffering. A tumor occupying the left side of the abdomen, extending from the ribs to the iliac crest, seemingly elliptical in shape, the long diameter parallel with the axis of the spine, was readily made out. Direct pressure or the effort to move the mass in any direction was painful. The tumor was only slightly movable. The history of its development, as well as the location, pointed quite clearly to the kidney as the seat of disease. A careful study of the urine for ten or twelve days satisfied me that if one kidney was seriously involved the other organ was in good condition and doing sufficient work. Professor Janeway, who saw the patient with me, concluded that the kidney was the seat of a neoplasm. An operation, the dangers of which were fully submitted, was advised, accepted, and, after two weeks of careful preparation of the patient, was performed. The lumbar incision was made, extending from the eleventh rib to below the iliac crest. On approaching the mass, it was found to be the kidney, and of such size that the opening was increased by a transverse incision passing from the middle of the first incision well over to the left linea semilunaris. The peritonæum was not opened, but was rolled or dissected inward. The bulk of the tumor was situated above the twelfth rib, well up in the arch of the diaphragm. The operation lasted nearly three hours, and was practically bloodless.

The unusual vascularity of the tissues about the tumor, together with the large size of the neoplasm, made the dissection necessarily tedious. During the last hour of the operation hypodermics of whisky were employed, on account of the weakness and rapidity of the pulse. The patient became conscious two hours after the wounds were closed, but did not fully recover from the shock of operation, and expired five hours later.

An autopsy was not permitted. The tumor was eight inches in the longest measurement, and varied from two to four in transverse diameter. The microscope showed it to be medullary carcinoma, as by the report of Dr. J. S. Thacher, of the Polyclinic Laboratory.

Case XII. *Nephrotomy.*—S. A., forty-seven years old, a tailor, a native of Russia, was admitted to Mount Sinai Hospital, December 10, 1886, in the service of Dr. Gerster, with symptoms of vesical calculus, for which left lateral lithotomy was performed April 5, 1887, and a stone weighing twenty-one and a half grammes was removed. He recovered very slowly after this operation, and in August began to develop symptoms of perinephritic abscess. On August 25th Dr. Gerster made an exploratory aspiration, with negative results.

In October he came under my care. At this time he was slowly improving from the severe prostration which had followed the lithotomy. The urine contained a small quantity of pus, granular and hyaline casts, and, as estimated, more albumin than the pus would account for. He complained of an almost constant pain over the region of the right kidney. On November 2d the temperature was 104°; on November 4th it was still high and there was great pain. On November 8th I made an exploratory incision five inches in length along the outer edge of the quadratus lumborum muscle and down to the kidney. Introducing the finger, the kidney could be distinctly outlined and seemed in normal condition. There was slight thickening of the pelvis, but it contained no calculus, nor was it overdistended. Two good-sized rubber drainage-tubes were inserted, the wound irrigated and dressed. It healed promptly without suppuration. The patient steadily improved up to November

19th, having had no exacerbation of temperature. At 9 P. M. on this date the thermometer registered 105°. It went down to about the normal on the following day and ran about normal to January 21, 1888, when 105° was again reached. Notwithstanding these drawbacks, he continued to improve, and was discharged very much improved on March 1st.

Summary.—The cases of exploratory laparotomy * are reported chiefly because they will add something, however small, to the argument in favor of this radical method of diagnosis. When careful asepsis is employed, I think we may safely say that simple exploration of the peritoneal cavity adds little to the danger of the situation.

In one of these cases, that of suspected pyloric stenosis, so many different physicians had given their opinion that this condition existed, that the patient insisted upon exploration. Her prompt recovery was due chiefly to the cure of the irritation at the cervix, and in good part to dissipation of her anxiety in regard to suspected cancer of the stomach.

In Case IV (general purulent peritonitis) the patient was practically moribund when first seen, and the operation was a forlorn hope. I hold it to be accepted that laparotomy with irrigation of the peritoneal cavity in purulent peritonitis is a justifiable procedure. It should be done, however, in the earlier steps of the inflammatory process; in fact, as soon as the general character of the peritonitis is recognized. For irrigation I prefer Thiersch's solution warmed to 105°–110° F. Water that has been boiled and cooled down to this temperature is next in order. In two cases I have successfully employed sublimate solution, 1 to 18,000.

Cases V and VI illustrate two forms of *perityphlitis*, one in which resolution did not occur, ending in operation, fæcal fistula, and death; in the other, resolution took place and operation was avoided.

If the abscess had been recognized in the first case early enough and opened, the fistula need not have occurred and the patient's life would not have been sacrificed. In this instance the pus formed behind the peritonæum and colon above the *caput coli*, and the fistula broke through near the junction of the cæcum and colon.

In Case VI operation was deferred on account of low temperature, normal pulse, and absence of any marked symptoms of pus-formation or spreading peritonitis.

In Case VII the original trouble was *appendicitis*, obstruction occurring from adhesions of the ileum to the appendix. Perforation had not taken place—in fact, was rendered practically impossible by the adhesions which were found immediately over the place of lodgment of the grape-seed. This patient was, in my opinion, sacrificed first by delay in operation, for which the attending physician could not be blamed. Secondly by the administration of powerful drastics when occlusion was complete.

My experience in these cases convinces me that—

1. In a fair proportion of cases of perityphlitis, resolution of the inflammatory mass takes place without suppuration and abscess.

2. In very rare instances pus may form and remain for an indefinite period without producing the marked acute symptom of abscess.

3. The appendix is the seat of the inflammatory process in a majority of these cases.

4. This being the case, and considering the intimate relation of this organ to the peritonæum, it follows that peritonitis, usually local, possibly general, is present in a vast majority of cases.

The formation of pus may occur within the peritonæum or behind it. In the very incipiency of this process rapid adhesions, occurring between the peritoneal surfaces, arrest the progress of an abscess in this direction, while the underlying retroperitoneal tissues offer less resistance. Hence, although the inflammatory process is in its incipiency intraperitoneal, pus collections are much more frequent in the retroperitoneal space. The rapidity with which these adhesions occur on the peritoneal surfaces is well exemplified in Case VII, where, although the grape-seed had not quite perforated the appendix, the wall of the ileum was firmly adherent to this point, and, had not occlusion of the small intestine ensued, the perforation of the appendix would have communicated directly with the canal of the ileum.

5. As to the time at which operative interference is indicated, the circumstances of each case must determine. Operation within the first week is rarely indicated unless symptoms of perforation are present, or unless high temperatures (105°) prevail, with other symptoms of the rapid accumulation of pus. If exploration be deemed advisable, it should by preference be by incision and the retroperitoneal dissection. The use of the aspirator-needle should be cautiously advised. When the abscess is well marked it is scarcely necessary, and when it is obscure it is not free from danger.

6. Case VIII illustrates the difficulties which may occur in an effort at diagnosis in abdominal lesions. This boy gave as perfect a history with the physical signs of perityphlitis as I have ever seen, and yet there was occlusion by a band. The peritonitis did not seem severe enough to justify the high temperatures, and there was no pus collection.

In Case IX obstruction was so evident that a very conservative and justly distinguished diagnostician advised operation, and yet an enema brought about recovery.

This case is in happy contrast to Case VII, in which there was (as shown by autopsy) complete and insurmountable occlusion, and yet croton-oil, elaterium, and calomel were administered by a consultant, notwithstanding these symptoms of obstruction were present for three days—additional evidence, if such were needed, to show that these lesions of the abdominal viscera should, in their incipiency, be placed under the surveillance of a surgeon.

Case X, gunshot wound of the intestines, is still another argument in this direction. Five hours after this boy was shot he came out of shock, and for five hours was in excellent condition for operation. Had a surgeon been summoned as soon as the accident occurred, he would have prepared for operation and performed laparotomy when reaction took place.

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* To those interested in statistics of exploration of the abdomen without further operation, reference is made to a recent interesting article by Dr. Baldy in the Philadelphia "Medical News."

Case XI, nephrectomy, suggests to me the single question of which incision is the better for removal of tumors of the kidney.

The anterior operation is, in my opinion, preferable for nephrectomy when the organ is unusually large. For small tumors the lumbar dissection seems the safer procedure.

SUCCESSFUL SIMULTANEOUS TRIPLE AMPUTATION FOR RAILWAY INJURY.

By A. ERNEST MAYLARD, B. S., M. B. (Lond.),
F. F. P. S., Glasgow,
EXTRA-DISPENSARY SURGEON TO THE WESTERN INFIRMARY, GLASGOW, SCOTLAND.

Under the foregoing heading, Dr. John Ashhurst, Jr., read a paper before the College of Physicians of Philadelphia, at the March meeting, showing a patient upon whom he had successfully operated. When reading the account of the case, as recorded in the "New York Medical Journal" for April 7, 1888, it occurred to me that the record of a somewhat similar case, which had recently (August, 1887) come under my own observation and treatment, might be interesting. I shall simply state the facts of the case, without entering into the more general considerations treated of in the instructive discussion raised by Dr. Ashhurst.

A lady of middle age and robust constitution was alighting from a train before the latter had been brought to a standstill. Missing the step of the carriage, she slipped between the platform and wheels, and when extricated was found to have had her right arm torn off and her left hand crushed. She was at once removed to her residence, where I saw her about two hours after the accident. She was then lying as she had been brought in; was restless, but not markedly collapsed. On removing her clothes, the following injuries were found: A compound comminuted fracture of the bones forming the left knee joint, with considerable laceration of the soft parts above the joint; a complete severance of the right upper extremity just below the middle of the arm, with the humerus projecting, splintered, and freed of periosteum, and the soft parts around much torn; and a compound comminuted fracture of the index and middle fingers of the left hand.

With the aid of Dr. Whitelaw and Dr. Smith the patient was placed under the influence of chloroform, and the following operations performed: The left thigh was amputated by a "modified circular" operation at the junction of the middle and lower thirds, the skin flaps being obtained as well as possible; the exposed and bare portion of the humerus, for about an inch, was sawed off, the brachial artery resecured by a ligature, and the muscles and other soft parts trimmed up; and the left index and ring fingers were amputated at the metacarpophalangeal joints.

The patient took the anæsthetic kindly, but, on coming to, reaction was accompanied with excitement. In the course of the night she had two subcutaneous injections of morphine—a half a grain at each injection. This had a distinctly quieting effect and enabled the patient to get some sleep. When I saw her the next morning she had considerably recovered from shock, was inclined to be hysterical, but free from pain, and able to take some light diet. The wounds, which at the operation had been treated antiseptically, were examined and redressed. In every respect they looked well. There is little further to add, the patient making a good and rapid recovery, the thigh stump, however, giving at one time some little trouble.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 2, 1888.

CANCER OF THE LARYNX.

At a meeting of the Section in Laryngology of the New York Academy of Medicine held last week a highly interesting paper upon "Cancer of the Larynx" was read by Dr. Charles H. Knight. Three questions were discussed in it: (1) Does malignant disease ever result from transformation of a benign growth in consequence of operative interference? (2) How shall a diagnosis be made? (3) What is the proper treatment?

In answer to the first question a careful review of published facts and opinions bearing upon it was given and the truth elicited that, while several illustrative cases were either mentioned or hinted at, and while several authors had made general statements to the effect that malignant degeneration might occur, the actual proof that such degeneration had taken place was based upon very meager grounds. We are not surprised, therefore, that the author concluded that traumatism alone was not capable of creating malignancy, and that other elements, such as constitutional vice or predisposition, were necessary. Authentic instances of malignant change occurring in a benign laryngeal growth are so few that there is no reasonable ground for inferring a special tendency to such change, or to refrain from endolaryngeal interference in suitable cases.

In the matter of diagnosis the gross appearance of a lesion may not betray its character. This is particularly true of a malignant ulcer obscured by papillomatous overgrowth, or complicated by an extreme degree of simple inflammatory infiltration, or an extensive suppurative process. Tubercle, syphilis, and malignant and benign neoplasms possess so many features in common that errors in diagnosis must occur if reliance is based solely upon the laryngoscope. Nor do the clinical history and the subjective symptoms furnish indubitable proof in every case. Each one of the usual symptoms may be wanting or else distinctly modified. There are, however, two signs of malignant disease of the larynx which have received less notice than they deserve. The first is the existence of pain, shooting from the larynx toward the ear of the affected side. The other symptom is disclosed by the laryngoscope and is seen in impaired mobility of the vocal band on the affected side of the larynx, the action of the laryngeal muscles being impeded by the infiltration characteristic of malignant disease. These symptoms, again, are not constant.

As an aid to diagnosis the microscope is most useful, for, although the existence of a specific cancer bacillus may not have been conclusively proved, the microscopic appearance of the affected tissues is usually characteristic, allowance being made for the fact that to be complete the examination should include the whole depth of the growth and not alone its superficial layers.

Perhaps the most interesting part of the paper was that which related to treatment. Dr. Knight believes in the performance of tracheotomy when that procedure is indicated by the various accidents which may cause occlusion of the larynx and dyspnœa. He holds, moreover, with many of the best authorities of the day, that the operation of laryngectomy is not a success, and that, while a partial or unilateral removal of the larynx may be unobjectionable in cases suitable for its performance, complete laryngectomy is, in view of present methods and results, an unjustifiable operation.

While admitting the justice of this conclusion as applied to the early history of the operation, and notably to the lamentable records of Billroth and other pioneer operators, it can not be denied that the world moves and that, with improved methods, increased skill, and additional light, the prognosis in these cases is decidedly more hopeful than it has ever been before.

Park's case, with the patient alive and well three years after complete extirpation, Gerster's two successful cases of unilateral extirpation, and, finally, the brilliant record of one unilateral and two complete extirpations successfully achieved by W. T. Bull within the past year, warrant the belief that the operation has still a future before it. Its success will probably depend upon certainty of diagnosis, early performance of the operation, a high degree of personal skill on the part of the operator, trained assistance, scrupulous care in the after-treatment, and, finally, a sanguine and cheerful temperament on the part of the patient.

THE PROPER LIMITS OF EXCISION OF THE RECTUM.

To those who hold that nearly all cases of rectal cancer are suitable for treatment by some modification of the operation of excision, Hildebrand's report of the results of this work in König's clinic ("Deutsche Zeitschrift für Chirurgie," Band xxvii, Hefte 3, 4) will not be encouraging. While it has been abundantly demonstrated that very extensive disease may be removed, and the technique of the operation has been so greatly improved that nearly any part of the rectum may be reached and extirpated rapidly and with comparative safety as to the immediate result, the advisability of such treatment has not as yet been established. The operations are done because they are manually possible and surgically justifiable, and because in this way only can the proper limits of operative interference be marked out.

Hildebrand's statistics cover 54 extirpations in 69 cases of disease, with a mortality of 35 per cent., which is higher than might have been hoped for. Moreover, exactly one half of the mortality was due to infection, which only proves that no amount of asepsis or antisepsis can be certainly relied upon to prevent periproctitis. Of those recovering from the operation, thirteen died of relapse and five were suffering from relapse at the time of reporting; but three had lived three years, six over two years, and eight over one year without relapse. A point which is made very plain by this report is that, no matter whether the sphincter is or is not preserved in the operation, sooner or later the condition in all cases is one of incontinence or cicatricial stricture.

The result of Hildebrand's study is to convince him that inguinal colotomy is the proper treatment for cases of extensive disease; or, in other words, to place him in opposition to the tendency toward promiscuous operation at present prevailing among German surgeons. It would seem as though conservative ideas as to this matter were certain after a little time to be accepted, and that operative interference must be limited by the extent of the disease and the amount of involvement of the structures around the rectum, as has been upheld by American surgeons ever since the operation was revived, after having for a long period been in disrepute because its proper field of usefulness was not strictly maintained. The simple facts seem to be that cancer of the rectum is less amenable to the knife than cancer of most other parts; that operation is followed by cure in a very small proportion of cases; that the dangers are great and the results as to comfort very unsatisfactory; and yet that in properly selected cases—those seen early—much good may be done by operation, and in those seen late an astonishing amount of lower bowel may be extirpated without an immediately fatal result.

THE PHYSICIAN AND DOMESTIC REFORM.

Count Rumford, clear of thought and straight of vision, made this suggestive remark: "The number of inhabitants who may be supported in any country upon its internal produce depends as much upon the state of the *art of cookery* as upon that of agriculture; but, if cookery be of so much importance, it ought certainly to be studied with the greatest care. Cookery and agriculture are arts of civilized nations. Savages understand neither." There is much important truth wrapped up in this passage—truth that it has taken the world nearly a hundred years to appreciate with sufficient force for any considerable number of people to co-operate in reducing it to practice. If the scale of population, as well as the comfort and health of the people, depends to such a degree upon the art of cookery, what are all the issues of politics in comparison with systematic training in this particular branch? That the public weal is largely dependent upon the condition of agriculture is now pretty generally understood. Since Rumford's time great progress has been made in its scientific study through the establishment of special schools and colleges. Agriculture is a recognized department of popular culture. The friends of social improvement are now called upon to lend a hand and rescue the preparation of food from the hands of the raw material that pours in upon us from various foreign countries. Why should not the term *lady* be restored to its old meaning of loaf-giver, loaf-maker? Make good cooking fashionable and the thing is done.

Of the imperative necessity of this movement there can not be the slightest doubt. It is a notorious fact that our kitchens are the strongholds of ignorance, prejudice, irrational habits, and mental vacuity, with the result that Americans suffer beyond any other people from wasteful, unpalatable, unhealthful, and monotonous cookery. Acquiescence in this state of things as something permanent and irremediable is no longer possible. The time has arrived when the advance of intelligence and the spirit of improvement must invade that citadel of stupidity, the kitchen, and banish from it all degrading associations by the presence of trained women who have made the work there carried on a matter of serious study. Cooking should be done as Northcote mixed his colors, "With brains, sir!" The difference between cooking that is good and cooking that is bad is very much an affair of attention to trifles. And this power of attention to trifles is the outward and visible sign of the inward and well-ordered brain. Slight mistakes, small omissions, little things done at the wrong time, spoil dishes, and therefore much healthful enjoyment. The charm of good housekeeping is the order of economy and taste displayed in regard to details. The little things are the great things after all, when their influence is taken into consideration. Fortunately, the application of science to daily living is constantly on the increase. The progress of education is beginning to take effect upon domestic life, and in the calends known as the "sweet by-and-by" there is a strong probability that Americans will have learned how to cook and discovered a diet suited to their environment. During the past few years cooking-schools have sprung up in this country and in England, and the English have taken the lead in organizing them as a part of their national and common-school system.

Considered from the standpoint of morality and hygiene, which in some respects seem almost one and the same thing, there is no reform movement that appeals so directly to the large-hearted physician as this present effort going on among us to secure rational cookery and authoritative knowledge of facts and rules in dietetic science. Why should not the doctor have a chair in the cooking-school? His place in nature as prophet, lawgiver, guide, philosopher, and friend makes him at home wherever help is needed. To the highest style of man there is neither great nor small, necessity being the only gauge of things ideal and non-ideal. The world, like Ajax, prays for light. What we shall eat, and how, are ever-recurring problems. Upon their wise solution depend, to a great extent, the health and happiness of mankind. The experience of the past upon this subject, a hopeless, unclassified mass, wheat and chaff, about as valuable as uncut gems from a mine, is the natural inheritance of all women interested in the ennoblement of domestic life. But other times require other manners. What is the best food, and how best prepared for nineteenth century man in America? Bewildered women are uttering the old cry: "Come over and help us." Have you sound knowledge upon the science of common things? Do you wish your fellows well? Then, friends, let us go!

MINOR PARAGRAPHS.

DOGS IN THE LYING-IN ROOM.

The newspapers of last Tuesday contained a short account of an attack made upon a Boston physician, while performing his duties as an *accoucheur*, by a bull-mastiff which, until the birth of the child, had lain quietly in a corner of the room. Attracted or excited by the cries of the infant who was in the physician's hands, the animal made a savage spring, it was supposed, at the child, but the doctor was quick enough to interpose his arm, which was seized by the dog. The child was taken by the frightened nurse and thus rescued from a severe injury, if not from death. Not so the physician, who was badly bitten in several places, and it was not until after a severe struggle, in which he was aided by his assistant, whose services had been necessary to anæsthetize the patient, that the animal was overpowered and killed by strangulation. Whatever may be the effect of the wounds inflicted by the dog, and we trust they will not be of a serious nature, the lesson is one by which all may profit to the exclusion of dogs from the lying-in room. The instincts of the animal, particularly of the breed named, lead it to attack, not only other animals, but, on occasions, even children and grown persons, and it is not to be wondered at that the cries of a newly born infant should arouse it to a state of fury liable to jeopardize the life of the child or of any person who stood, as did the *accoucheur*, between it and the object of its attack.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 29, 1888:

DISEASES.	Week ending May 22.		Week ending May 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	5	4	8	5
Scarlet fever	164	30	193	24
Cerebro-spinal meningitis	6	5	3	2
Measles	206	7	188	11
Diphtheria	193	56	154	47
Small-pox	12	7	4	1

The New York Post-graduate Medical School and Hospital.—At a meeting of the Board of Trustees, held on Monday, May 28, 1888, the following appointments were made in the faculty: Dr. A. Jacobi, professor of diseases of children; Dr. R. F. Weir, professor of clinical surgery; Dr. P. A. Callan, professor of diseases of the eye; Dr. L. B. Bangs, professor of diseases of the genito-urinary organs and venereal diseases; Dr. J. E. Winters, professor of diseases of children; Dr. O. B. Douglass, professor of diseases of the nose and throat. Dr. William A. Hammond, who was one of the founders of the school, has resigned as professor of nervous and mental diseases.

The Board of Medical Examiners of North Carolina.—At the annual examination, held at Fayetteville, on Monday, May 7, 1888, of the fifty-three candidates for a license to practice in the State, thirty-six were successful. The annual premium of medical books of the value of $25, offered by the publishers of this Journal to the candidate who passes the most creditable examination, has been awarded for 1888 to Dr. Henry Q. Alexander, of Davidson College.

The late Dr. Dunster.—The following resolutions were adopted at a meeting of the Wayne County, Mich., Medical Society, held in Detroit on Friday, May 4, 1888:

Whereas, It has pleased Almighty God to remove from his earthly sphere our worthy companion and professional brother, Dr. Edward S. Dunster, of Ann Arbor, Mich., therefore be it

Resolved, That we as a society tender to his grief-stricken family our heartfelt sympathies.

To the profession before whom he has appeared so eloquent in address, logical in his reasoning, honest in his opinions which he maintained with his utmost power, and, above all, his loyalty to his profession he so dearly loved, and for whose best interests he so long and sedulously labored, we can only say that the loss of one so eminent can illy be told in resolutions or words; in this the heart alone can speak.

In obedience to the Almighty Power that rules the destinies of men, that can build up or cast down, that can give or take away, we bow in humble submission about the bier of our departed friend, fellow-member, and professional brother. Be it further

Resolved, That our secretary transmit a copy of these resolutions to the press and to the family.

[Signed]
William Brodie, M. D.,
Hal C. Wyman, M. D.,
C. Henri Leonard, M. D.,
Committee.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 26, 1888:*

Dickson, S. H., Passed Assistant Surgeon. Detached from the Receiving-ship Dale, and ordered to the Marine Barracks, Washington, D. C.

Nash, F. S., Passed Assistant Surgeon. Ordered to the Receiving-ship Dale, in addition to his present duties.

Ruth, Melancthon L., Surgeon. Granted one year's leave of absence from date.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 20 to May 26, 1888:*

Sutherland, Charles, Colonel and Medical Director. To inspect the medical department at St. Francis Barracks, Florida; Fort Barrancas, Florida; Mount Vernon Barracks, Alabama, and Jackson Barracks, Louisiana. S. O. 100, Division of the Atlantic, May 19, 1888.

Brown, Harvey E., Major and Surgeon. Directed to continue on duty at Fort Barrancas, Florida, until further orders. S. O. 115, A. G. O., May 18, 1888.

Kimball, J. P., Major and Surgeon. Leave of absence extended two months. S. O. 117, A. G. O., May 21, 1888.

McCreery, George, Captain and Assistant Surgeon. To accompany Seventh Cavalry from Fort Meade, Dakota Territory, to Fort Riley, Kansas. From Fort Riley he will return to Fort Meade. S. O. 42, Department of Dakota, May 17, 1888.

Wyeth, M. C., Captain and Assistant Surgeon, will be relieved from duty at Fort Barrancas, Florida, at the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Huachuca, Arizona, for duty at that post. S. O. 115, A. G. O., May 18, 1888.

Kneedler, William L., First Lieutenant and Assistant Surgeon, will accompany from Fort Snelling, Minnesota, that portion of the Twenty-fifth Infantry destined for Fort Shaw, Montana Territory. From Cascade, Montana Territory, he will accompany the portion of the Third Infantry en route from Fort Shaw, Montana Territory, to Fort Snelling, Minnesota. S. O. 40, Department of Dakota, May 14, 1888.

Robertson, R. L., First Lieutenant and Assistant Surgeon, will accompany from Fort Keogh, Montana Territory, the Fifth Infantry to the Department of Texas, returning to his station on the completion of the duty. S. O. 43, Department of Dakota, May 18, 1888.

Ewing, C. B., First Lieutenant and Assistant Surgeon, will accompany the Twenty-second Infantry, as medical officer, to the Department of Dakota, returning to his station on the completion of the duty. S. O. 56, Department of the Missouri, May 17, 1888.

Barrister, W. B., First Lieutenant and Assistant Surgeon. Granted leave of absence for two months, with permission to apply for an extension of twenty-seven days. S. O. 119, A. G. O., May 23, 1888.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the three weeks ending May 26, 1888:*

Wyman, Walter, Surgeon. Leave of absence extended fourteen days. May 22, 1888.

Magruder, G. M., Assistant Surgeon. Relieved from duty at the Marine Hospital, Chicago, Illinois, and detailed as medical officer of the revenue bark Chase during her summer cruise. May 19, 1888.

Society Meetings for the Coming Week:

Monday, *June 4th:* Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Hartford, Conn., City Medical Association; Providence, R. I., Medical Association; Chicago Medical Society.

Tuesday, *June 5th:* Indiana State Medical Society (Indianapolis); Medical Society of the State of Pennsylvania (Philadelphia); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Columbia (semi-annual—Chatham), Franklin (semi-annual), Herkimer (annual—Herkimer), Niagara (annual—Lockport), Orange (annual—Goshen), Saratoga (annual), Schoharie (annual), Ulster (annual—Kingston), and Yates (annual), N. Y.; Hudson, N. J. (Jersey City), and Warren (annual), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine.

Wednesday, *June 6th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Societies of the Counties of Cattaraugus (annual), and Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Philadelphia County Medical Society (regular); Bridgeport, Conn., Medical Association; Medical Society of Orleans County (annual), Vt.

Thursday, *June 7th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *June 8th:* New York Academy of Medicine (Section in Neurology); Medical Society of the Town of Saugerties, N. Y.

Saturday, *June 9th:* Obstetrical Society of Boston (private).

OBITUARY NOTES.

Augustus R. Davidson, M. D., of Buffalo, died on Friday, May 25th, at the age of forty-three. He was a native of the Province of Ontario, Canada, and was graduated from the Medical Department of the University of Buffalo in 1878. He did not, however, enter at once into the practice of medicine, but for several years continued his work as a chemist, as which he had been graduated from the College of Physicians and Surgeons of Lower Canada. Upon the organization in 1883 of the Medical Department of the University of Niagara, in which he had taken an active part, he was appointed to the chair of chemistry, toxicology, and dermatology, which position he occupied at the time of his death. He was at one time an associate editor of the "Buffalo Medical and Surgical Journal." The deceased was a member of the Medical Society of the County of Erie.

Letters to the Editor.

A DISEASE SIMULATING LOCOMOTOR ATAXIA.

Baltimore, *May 23, 1888.*

To the Editor of the New York Medical Journal:

Sir: The following case has proved to be one of interest to me from its resistance to all remedial agents. I write, hoping you may be able to recommend some other plan of treatment:

Mr. W., aged twenty-nine, unmarried, family history good, for the past six years has been suffering from an almost constant pain of a dull aching character in the neighborhood of the sacro-iliac articulation, extending at times down the leg, along the course of the sciatic nerve, and to the anterior surface of each limb. These symptoms would remind one of locomotor ataxia, but such does not appear to be the case. There is no anæsthesia, inco-ordination of muscles, or loss of equilibrium when standing with the eyes closed. Reflexes normal. There are present, however, the burning pain prominent in locomotor ataxia, and the "electric-like pains which shoot down the limbs along the course of the nerves." Vision normal.

Exercise, so long as it is performed without bending the back, can be endured, and no evil effects follow; walking greatly increases the pain, although during the past year this has improved, and longer walks can now be taken. When the dragging sensation in the back is worse, a disagreeable and unexplainable feeling is also experienced in both eyes and across the forehead.

The previous history of the case is as follows: While performing athletic exercises with Indian clubs, which exerted much strain upon the back, the patient suddenly felt a sharp pain in the region of the sacro-iliac junction. Paying but little attention to it, he continued daily exercise for some weeks, until obliged to cease because of the pain produced. Thinking that abstinence from work of any kind would be of benefit to him, a trip West, followed by one abroad, was taken. Upon his return there was but little improvement. After receiving treatment from several physicians he came to me. Diagnosticating his case as a chronic inflammation of the sacro-iliac ligaments, I placed him upon full doses of aconitine, which had the effect of producing slight relief. I have lately put him upon the use of the biniodide of mercury in $\frac{1}{16}$-grain doses, slowly increased to one quarter of a grain, conjoined with the application of a mustard plaster to the back at bed-time, twice a week, which has a very soothing effect. The administration of the mercury is of too recent date to state definitely its result. Galvanic and faradaic electricity have been employed with but transient relief. He has taken—according to his own satement, and I am inclined to think he is partially correct—almost every drug which can be given, with but little or no improvement. In conclusion, I would state that, so far as I can ascertain, there is neither kidney nor bladder trouble, nor stricture; neither has the patient suffered from syphilis.

I should like much to hear the opinion of others regarding diagnosis and treatment.

Wm. D. Thomas.

611 North Carrollton Avenue.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of May 8, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Some Surgical Lesions of the Abdominal Viscera, with Illustrative Cases.—Dr. J. A. Wyeth read a paper with this title (see page 597).

Dr. H. B. Sands said that he had been much interested in the paper, and he agreed with the reader in his remark that explorative laparotomy ought to be performed more frequently in cases of suspected intestinal trouble, since the danger was often small. On the other hand, there might be much risk in this procedure if septic processes were present in the abdominal cavity. The speaker was unable to cover the entire ground of the paper, but he thought that the society would be interested in hearing his recent experience in the surgical treatment of perforative peritonitis. In February last he had read a paper on a successful case of laparotomy for perforation of the vermiform appendix, and presented the patient. Since that time he had had two more cases, the histories of which were as follows:

Case I.—On April 16th he saw a gentleman, aged twenty-six, who had been very ill for thirty-two hours. He said that when thirteen years of age he had had some abdominal trouble, which had been called peritonitis; three years later he had had a similar attack. He had had for several years a small, irreducible hernia on the right side, which had been thought to be omental. Five days before the speaker saw him he had begun to be troubled with slight pain in the region of the cæcum, which had not been sufficiently severe, however, to prevent his going about. On Sunday, April 15th, at four in the morning, he had had a violent chill, the temperature rising afterward above 102° F. He had had severe pain in the cæcal region, and had begun to vomit. On the following day he was better. Dr. Sands saw him at 12.30 p. m., nearly thirty-three hours after the chill, and found evidences of peritonitis, apparently localized in the right inguinal region. The abdomen was very tender, and there was slight dullness on percussion over the region above mentioned, but no tumor could be discovered, either in the iliac fossa or on examination through the rectum. The knees were drawn up, the patient had an anxious expression, and considered himself dangerously ill. The speaker then felt confident that there was a perforation of the appendix vermiformis, and proposed to perform laparotomy at 3.30 p. m. The patient was seen by several other physicians and surgeons; the former did not believe in the advisability of operating, and it was decided to delay it until the arrival of the young man's father, at 10.30 p. m. At that time the gentleman who had opposed operative interference consented to it, on the ground that if no pus was present an explorative incision would be attended with but little risk, and, on the contrary, if pus was present, life might be jeopardized by further delay. The speaker made an incision directly over the cæcum, to the outer side of the rectus muscle, and found marked œdema of the subcutaneous tissues, while the muscular layers were adherent to one another. On opening the peritonæum, pus spurted out to the distance of an inch. The wound was enlarged, and the appendix was sought for. It was about an inch in length, and was evidently the focus of the suppurative process. No perforation was discovered, although it was partly cleft transversely, nor was there any foreign substance in the peritoneal cavity. The speaker thought that there must be a perforation at some point; accordingly, he ligated the appendix with silk at its base, and cut it off. The adjacent intestinal coils were covered with pus and recent lymph. The omental hernia was next examined. It was cordiform, about an inch in width, and could not be spread out. It was cut off above and below, to the extent of two inches, double catgut ligatures having been previously applied on each side. The intestines in the iliac fossa were attached to one another by slight adhesions, and the appendix lay behind the cæcum. The neighboring peritoneal cavity was thoroughly irrigated, first with warm water, and then with a small quantity of bichloride solution (1 to 1,000). Afterward a little iodoform was sprinkled over the wound, which was packed with iodoform gauze, placed around a rubber drainage-tube, and closed at its upper part with three interrupted silver-wire sutures. No bad symptoms followed the operation. The gauze was removed piecemeal, the removal being completed on the fifth day, and the bowels moved on the eighth day. Now, at the end of three weeks, the patient was sitting up, and the wound had almost entirely closed.

Case II.—A week ago to-day (Wednesday) Dr. Sands saw a medical gentleman, aged forty, who had been ill since the preceding Monday. On that day he had moved, and thought that he had strained himself. He had drunk some wine before retiring, and had been awakened at eleven o'clock by a severe pain in the right iliac region. His brother (also a physician) had seen him the next morning and had administered opium, which had relieved the pain. Dr. Sands saw him at 4.30 p. m. the following day (Wednesday), and found him with a temperature of 102° to 103°, with tenderness and dullness on percussion over the right iliac fossa; the knees were drawn up, but there was no vomiting. No tumor could be felt. The speaker believed that perforation had occurred, and advised an operation without delay. It was performed at 7 p. m. On making the incision no œdema of the connective tissue was observed, as in the former cases, while the muscular layers could be readily separated. Very little pus escaped on opening the peritonæum, but, on pushing the tissues aside, pus and fæcal matter were plainly seen. The appendix vermiformis was black and gangrenous, and was tied with silk and removed. It was impossible to find its lower extremity until the finger had been passed downward into the true pelvis, so as to pull it out of that cavity into which it projected. It had a distinct mesentery, and on examination a perforation was found about an inch from its base. The adjacent suppurating cavity was irrigated with hot water before much manipulation was attempted, in order to avoid the risk of infection. Some organized lymph was removed, and the speaker was inclined to hope that the operation would be successful, until he passed his finger into Douglas's pouch and found that it contained a large amount of purulent fluid. This cavity was irrigated until the water came out clear. Although the patient was relieved of pain after the operation, the prognosis was regarded as unfavorable, an opinion which was supported by subsequent events. Vomiting and abdominal distension soon developed, and he died at 12.05 a. m. on Sunday.

In reviewing this case, together with those previously reported, Dr. Sands inferred that there would be a good chance of saving life only when the operation was performed early. If it was delayed until an extensive septic process had developed, the prognosis would be unfavorable, as had been the case in the third patient. In the other two the inflammation had been limited to the iliac fossa and they had recovered. If the operation was delayed until considerable manipulation of the abdominal viscera became necessary, the gravity of the case would be much increased. In another case the speaker thought that he would first remove the appendix through an incision in the iliac region, and then, if he found that the inflammatory process had extended, he would drain the original cavity, and proceed at once to perform median laparotomy in order to irrigate the general cavity. This had been proposed later in the second case, but the patient's condition was such that it had not been deemed advisable. With regard to the chances of recovery generally after late operations, Dr. Sands said that he had heard of cases in which patients with strangulated hernia had been operated upon successfully when in a state of collapse, but he had never observed such a thing himself, and doubted whether the statement was true. When the heart's action was reduced through prolonged septic infection, operative interference would only hasten death.

In the three cases of laparotomy that he had performed for perforative peritonitis the symptoms had been nearly identical, and had been quite characteristic as distinguished from those of perityphlitis. A diagnosis could be made early, and thus there was a chance to save the patient. As it might be of interest to the society, he would state that in the case of an eminent medical gentleman, Dr. C. R. Agnew, who had recently died, preparations had been made for performing laparotomy the day after he became ill, but it had been the unanimous opinion of the attending physicians and surgeons, as well as of the patient himself, that an operation was not advisable, by reason of his age, the obscurity of his symptoms, and his general condition. It had been hoped that the disease was localized, and it had been decided to wait. On Wednesday the speaker had been called to operate, but he had found the patient's temperature 97°, with hiccough, and other signs of collapse. He had rallied after receiving stimulants, and his temperature had risen to 100°, but at no time thereafter could laparotomy have been performed with any prospect of success. On Friday Dr. Sands had opened and washed out the peritoneal cavity imperfectly. On Saturday a gentleman, who had not been present at the previous consultations, had thought that the appendix vermiformis might with advantage be found and tied off, but all the other consultants had believed that peritonitis had become too advanced to justify this step. The question had been submitted to the patient himself, who had declined to have the operation performed. He had lingered for several days, and died on the following Wednesday. The body had been examined, in accordance with a request made during his life, and the appendix had been found occupying an unusual position, extending upward in contact with the bodies of the lumbar vertebræ; it had been entirely gangrenous, and, although a perforation had undoubtedly occurred, it had not been found at the time on account of the extensive changes in the surrounding parts. There had been a large fæcal concretion in the peritoneal cavity. Only an operation of great extent would have given any chance of recovery, and even then it would have been difficult to find the appendix, as its unusual position would not have been suspected beforehand.

Dr. J. D. Bryant remarked that he had treated a fatal case of perforation of the appendix, in which the diagnosis had been confirmed on opening the abdomen; the appendix had been tied off. The patient had died twelve hours after of general peritonitis. Some time after this he had seen in consultation a case of peritonitis of nearly a week's standing, in which the symptoms had pointed clearly to perforation. In view of his experience in the previous case, he had judged that it would be unwise to open the abdomen; moreover, the physician in attendance had been unwilling to have the operation performed. In both cases the pain had been referred entirely to the epigastric region. It had been impossible to learn anything by palpation of the abdomen, as there had been so much distension in both instances. In the second case a free incision had been made above the crista ilii, a quantity of offensive pus had been evacuated, and the symptoms had been temporarily relieved, especially the hiccough and vomiting. The day following the operation the vomiting had returned, had become markedly stercoraceous in character, and death had ensued. At the autopsy an abscess cavity had been discovered, confined to the iliac fossa and communicating with the wound. The appendix vermiformis had been sought for in its usual site, but it could not be found; an enterolith of about the size of a pea had been found lower in the pelvic cavity. On opening the cæcum and passing a probe into it, after careful search a small aperture corresponding to the beginning of the appendix had been found. The appendix itself had entirely disappeared, from sloughing no doubt.

Apparatus for maintaining Continuous Extension of the Elbow Joint in all Positions of the Forearm.—Dr. Bryant showed a piece of apparatus which he had devised to meet a special indication. The patient by whom it had been used had come to him a year previously and said that many years before he had sustained a fracture of the external condyle of the humerus. He had for some time suffered with severe pain over the condyle, which had been aggravated by his occupation—scroll-sawing. The speaker had advised rest, which had given relief, but the patient had been obliged to resume his work, when the symptoms had returned. There had been marked swelling over the affected region, with crepitus. Since the pain was relieved by extension, it had occurred to Dr. Bryant that if continuous extension of the forearm could be maintained, a permanent cure might be obtained. The apparatus had been adjusted, and had been worn by the patient until he was entirely relieved. The following letter, which had been received from the patient since the evening of the meeting, could not fail to be of interest:

"Oneida, N. Y., *May 7, 1888.*

"*Dr. Joseph D. Bryant.*

"Dear Sir: My elbow was fractured when I was a boy seven years of age, and has troubled me more or less for years. In May, 1886, it began to grow worse, the pain being so severe as to keep me from my business most of the time. After wearing the splint which you ordered to be made for me, my arm began to improve, and at the end of three months I considered the limb well, took off the splint, and have not had it on since. I worked most of the time while wearing it. After suffering all the pain as I did so long, I can not tell you how grateful I feel to you. Hoping this will prove of some use, I am,

"Very respectfully,
"A. W. L——."

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of April 11, 1888.

The President, Dr. J. Solis-Cohen, in the Chair.

(*Concluded from page 556.*)

Some Cases of Abdominal Surgery.—Dr. J. M. Barton read a report and exhibited some specimens. The first case was one of abscess of the liver in which a free incision had been made, drainage established, and the patient had made a good recovery.

The second was a case of epithelioma of the œsophagus occurring in a man forty-two years of age. Gastrostomy had been performed, but the patient had died from exhaustion four days after the operation.

The third case was that of a large uterine fibroid, occurring in a woman thirty-six years of age. An exploratory incision, under full antiseptic precautions, had been made, but there had been found adhesions so extensive that the removal of the uterus or ovaries had been rendered impossible. The wound had been closed in the usual manner and the patient had made an uninterrupted recovery.

The speaker said that there were some points of interest connected with the subsequent history of the last case. Though previous to the operation the patient had almost invariably bled for ten days at each menstrual epoch and at least twice between the menstrual flows, immediately after the operation the excessive bleeding had ceased, and for nearly two years she had regularly menstruated but three or four days; she had not lost more than one fourth of the quantity each day that she had prior to the operation, and there was no bleeding whatever between the menstrual periods. Her menstrual periods had gradually and irregularly increased until now, nearly three years after the operation, the speaker found in his last note made this year: "No bleeding between menstrual periods; menstruation lasts from three to ten days; when the latter, the bleeding is slight most of the time." Her pains had ceased since the operation, her general health had greatly improved, and she looked much younger. Ever since the operation she had been, and was now, following her occupation as a school-teacher. Nothing had been done at the operation to account for this improvement, which was great enough to have been considered quite a success if the ovaries had been removed. The tumor was gradually increasing in size, and was now beginning to interfere with respiration.

The next case was one of so much interest that he was anxious to have it on record, though the principal part of the operative treatment was not performed by himself. The laparotomy was performed by his colleague, Dr. F. H. Gross, during his term of service, when the speaker was a member of the staff of the German Hospital; the herniotomy by himself during his term, though both were present, and took active part in both operations. He was indebted to Dr. Gross for permission to report the case, which was one of strangulated hernia, occurring in a lad eighteen years of age. The hernia had been a right inguinal which had been strangulated for eighteen hours before the admission of the patient to the German Hospital. On opening the sac of the hernia, nine inches of the bowel had been found to be in a sloughing condition. The ring had been nicked, the healthy ends of the bowel made to protrude, and the gangrenous portion incised. It was proposed, on the next day, to freshen the edges of the healthy bowel and bring them together. By the following morning the patient had developed an intense peritonitis with a temperature of 104°, and the operation had been postponed. After a week of severe illness he had recovered, the sloughing bowel having separated in the mean time.

Some weeks later, as the patient had been slowly emaciating, and the discharges looked as though the artificial anus was high up the bowel, operative interference had been decided upon. The wound had been enlarged directly upward, at first but slightly, but ultimately to the extent of several inches, for the purpose of joining the divided ends of the bowel. In the neighborhood of the artificial anus from two to three feet of intestine had been found, strongly matted together by inflammatory deposits; small projecting loops of a few inches in length had been found free with both ends terminating in the mass. The lower end of the bowel, from which the slough had separated, could not readily be distinguished from any of the other loops; and it had soon appeared that it would be useless to join it to the bowel which formed the artificial anus, as it had been completely obstructed at many points. As the colon had been free, and a few inches of the ileum, at the suggestion of Dr. Weed, then one of the resident physicians, it had been decided to join the bowel forming the artificial anus to the colon. For this purpose a small opening had been made in the cæcum, and one blade of Dupuytren's enterotome introduced, the other being carried into the bowel forming the artificial anus, and the two blades clamped together. A temporary ligature had been placed around both intestines while the toilette of the peritonæum was made; they had then been fastened in position, and the wound, about six inches in length, closed. The patient had done well after the operation, though it had been found necessary to reapply the enterotome twice before a satisfactory opening could be obtained—three times in all. The fæcal fistula had rapidly contracted, and when the speaker last saw him he was able to wear a pad over it for a week without removal; his bowels acted naturally, he was free from pain, gaining flesh, and was working as elevator boy at the hospital.

Operation for Strangulated Hernia.—Dr. Joseph Price read a report of three cases:

Case I.—Miss B., white, aged forty, single, a patient of Dr. Dundore, had had a reducible inguinal hernia of long standing and had never worn a truss. In May, 1887, it had become irreducible, and the bowels had been completely occluded for three days. Well-directed efforts to reduce failing, Dr. Dundore had decided upon operative interference, and invited the speaker to see the patient. The usual symptoms of a strangulated hernia were present, the abdomen being greatly distended and tympanitic. Upon incision, the bowel had been found to be firmly adherent to the sac, requiring considerable dissection to free it completely. After severing the stricture, the bowel had been pulled out for a few inches, and found to be completely occluded by bands of inflammatory tissue due to limited peritonitis at the point of stricture—the neck of the sack. These bands had been broken up by fingers, forceps, and scissors, which had restored the caliber of the bowel and it had immediately collapsed. The bowel had been very dark in color until released from these inflammatory bands, when its color had changed rapidly, and the speaker had decided that the circulation was sufficiently good to restore it to the abdomen. The canal had been closed by buried silk-worm gut sutures; the incision with silk. Dry dressing; recovery.

Case II was that of Miss K., white, aged seventy-five years, never pregnant, a patient of Dr. F. X. Dercum, who had called Dr. Price in consultation on March 1, 1888. He had found the patient in bed and very feeble, with a history of complete occlusion of the bowel for twelve days, and stercoraceous vomiting for eight days. The abdomen had been much distended and tympanitic. There had been a tumor of the size of a hen's egg over the right femoral ring which had presented no fluctuation or other symptoms of local trouble. There had also been a tumor over the left femoral ring of the size of a goose-egg, likewise presenting no symptoms of local trouble. The patient had said that the tumor on the left side had existed for eighteen years, while that on the right side was more recent, but also of several years' standing. Taxis failing to accomplish any results, operation had been suggested as the last resort, and had been performed the next day at the patient's request. As there had been no symptoms specializing either ring as the site of the obstruction, and as the distension had been so great that occlusion at some other point had been feared, the incision had been made in the median line. Examination had then revealed that the tumor on the left side was not a hernia, but either a hydrocele of the canal of Nuck, or an old hernial sac that had become cystic. The gut had been incarcerated at the right femoral ring, and had been very firmly adherent. Fearful of tearing the intestine, he had made another incision over the tumor, and had been compelled to dissect the intestine from its sac. The intestine had then been drawn through the median incision and carefully examined. It had been found to be greatly congested but speedily cleared, and had been returned to the abdomen. The neck of the sac had been twisted upon itself, and transfixed by deep buried sutures of silk, and stitched to the edges of the ring, the canal being closed by deep silk sutures. The median incision had been closed with silk sutures. Dry dressings. The bowels had moved spontaneously the same evening, and the patient had recovered without a bad symptom. Stitches had been removed the tenth day.

Case III was that of a woman upon whom an operation for ventral hernia had been performed. The hernia had been of fourteen years' standing and had increased from the size of a thimble to that of a pint tin cup. The woman had made a rapid recovery from the operation and in three weeks had been able to get up.

Dr. John H. Packard said that the amount of material presented for discussion in the papers read was so large that it would be difficult to do it justice. In connection with the cases of hernia reported, he briefly mentioned another, in which an old femoral hernia had been subjected to unjust suspicion. The patient, a woman, about fifty years of age, had been brought to St. Joseph's Hospital with intestinal obstruction of four days' standing; her general condition had been bad, and she had had fæcal vomiting. She had had an old left femoral hernia, which had given trouble on several occasions, but had always been successfully reduced. This had been cut down upon, and the sac found to be empty. Laparotomy had been at once performed, a twist of the small intestine being found and relieved, flatus had been discharged per anum, and the intense congestion and distension of the bowel had been relieved so that the mass had been easily returned. In spite of vigorous stimulation hypodermatically and by the mouth, the patient had sunk, and had died in about six hours. In this case, which would be elsewhere reported more in detail, an earlier operation would probably have had a different result.

As illustrating the difficulties attending the diagnosis of abdominal tumors, a case might be mentioned which had occurred at the Episcopal Hospital some years ago. A man had been sent down from the medical to the surgical ward to be operated on for an apparently movable tumor situated on the left side of the belly two inches below the level of the umbilicus. It had been found, however, that the mass was firmly adherent to the parietes, and the operation had been abandoned. The man had died a few months later, and an autopsy had showed that the disease was epithelioma of the pylorus, which had in some way become displaced and fastened by peritoneal adhesions in its abnormal relation.

The seat of pain was very deceptive as an index of the actual lesions in these cases. A woman who had been brought to the Pennsylvania Hospital in 1886 on account of a gunshot wound had complained of pain in the right iliac region only, yet the ball had ranged upward from the left loin to near the right axilla, wounding the pleura, colon, stomach, liver, right internal mammary artery, and right breast.

Dr. William Goodell said that some two years ago he had operated, performing a double ovariotomy. The cysts had been colloid, and there had been no indication of malignancy. About a year afterward, the patient then being apparently well, she had fallen in getting out of a carriage. There had been pain in her right side, considered by her attending physician in the country to be an attack of peritonitis. The pain had afterward shifted to the left hip, growing worse and worse. She had been brought to him again and he had examined her with the utmost care, feeling sure, from the symptoms and from the emaciation that had occurred, that there was malignant disease. He thought that perhaps the stump of the ovary had taken on malignant degeneration. Finding nothing, he had called in a distinguished specialist, who had twice examined her, under ether, but had failed also to detect a cause for the pain. The actual cautery had been applied along the course of the sciatic nerve, to which region the pain had been referred. Death had taken place in a few weeks, and at the autopsy, which had been requested by the lady before her death, disseminated metastatic cancer of the liver had been found. Clearly the ovarian disease had been malignant in the beginning, and had been the focus from which had sprung the hepatic disease. But the salient point here was pain apparently in the sciatic nerve, while the site of disease was the liver.

Dr. M. Price said that in many cases it would be found that the cause of strangulation of the bowel was adhesion of the small intestine and bands of inflammatory lymph. The pressure and irritation would set up slight peritonitis, and, finally, adhesions. An early exploration would save life. Handling of the bowel and tearing the adhesions, or snipping them with scissors, would do no harm. Sometimes we could not distinguish a mass of matted intestines from a tumor, as in the case of a little colored girl he had opened the other day. By the time the adhesions had been separated and the intestines liberated there had been no tumor. He thought that, in many cases, a fatal result might be attributed to the opium treatment. If any one would employ Epsom salts immediately after the patient came out from the ether, where opium was now used, he would never regret it. He would regret the use of opium. As to removing stitches, if silkworm gut was used, we need not give ourselves any concern. They might be left indefinitely. They would bear a strain of fifty or sixty pounds, and give no inconvenience of any kind.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

The Applied Anatomy of the Nervous System. Being a Study of this Portion of the Human Body from a Standpoint of its general Interest and Practical Utility in Diagnosis, designed for use as a Text-book and a Work of Reference. By Ambrose L. Ranney, A. M., M. D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-graduate Medical School and Hospital, etc. Second Edition, rewritten, enlarged, and profusely illustrated. New York: D. Appleton & Company, 1888. Pp. xxxv–791. [Price, $5.]

The Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. 1888, Sixth Year. Bristol: John Wright & Co. Pp. xv–558.

A Manual of the Operations of Surgery, for the Use of Senior Students, House Surgeons, and Junior Practitioners. Illustrated. By Joseph Bell, M. D., F. R. C. S. Edin., Consulting Surgeon to the Royal Infirmary, etc. Sixth Edition, revised and enlarged. Edinburgh: Oliver & Boyd, 1888. Pp. xvi–336. [Price, 6 shillings.]

The Essentials of Medical Chemistry and Urinalysis. By Samuel E. Woody, A. M., M. D., Professor of Chemistry and Public Hygiene, and Clinical Lecturer on Diseases of Children, in the Kentucky School of Medicine. Second Edition, revised and enlarged, with Eighty-five Illustrations. Louisville: John P. Morton & Co., 1888. Pp. 5 to 140. [Price, $1.25.]

Augenscheinliche Heilung eines das Symptomenbild des Carcinoma Ventriculi darbietenden Falles durch den Gebrauch von Cundurango. Von Dr. Franz Foerster, New York. [Aus der "New Yorker Medizinische Presse."]

The Extraction of Cataract, as Influenced by Mycological Development. By A. E. Prince, M. D., Jacksonville, Ill.

An Aseptic Atmosphere. Club-Foot. A Rectal Obturator. Palatoplasty. By David Prince, M. D., Jacksonville, Ill.

The Pulley Method of Advancing the Rectus, with Indications for its Employment. By A. E. Prince, M. D., Jacksonville, Ill. [Reprinted from the "Ophthalmic Review" and "St. Louis Medical and Surgical Journal."]

Thesis for the Doctorship in Medicine. Presented and sustained by Dinitch (Kosta). The Kephir, or Milk Champagne of Caucasus. Origin, Physiological Action, and Therapeutic Importance. New York: W. M. Downs, 1888.

Clinical Notes on Pruritus. By L. Duncan Bulkley, A. M., M. D., etc. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

On the Use of Lanolin and Boric Acid in Certain Diseases of the Skin in Children. By Russell Sturgis, M. D. [Reprinted from the "Boston Medical and Surgical Journal."]

The Physiological Argument in Obstetric Studies and Practice. By A. F. A. King, A. M., M. D., Washington, D. C. Being the Presidential Address delivered before the Washington Obstetrical and Gynæcological Society at the Annual Meeting, October 7, 1887. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Du pneumothorax simple sans liquide et de sa curabilité. Par Le Dr. L. Galliard. [Extrait des "Archives générales de médecine."]

Reports on the Progress of Medicine.

ANATOMY.

By MATTHIAS L. FOSTER, M. D.

Professor Gruber contributes the following notes of several anatomical curiosities which he has observed ("Arch. f. path. Anat. u. Phys. u. f. klin. Med.," Bd. cx, Hft. 3):

I. **A Corpusculum Articulare Mobile (Ossiculum Carpi Supernumerarium?) in the Carpo-metacarpal Amphiarthrosis.**—This was an oval body lying free in a cavity hollowed out of the bases of the second and third metacarpal bones and the os magnum, the larger part being in the base of the third metacarpal bone. It was composed of cartilage with a bony nucleus, but the writer objects to the term "supernumerary ossicle," because it did not extend to either the dorsal or palmar surface of the carpal or metacarpal bones, and took no part in the ligamentous apparatus of the wrist. Its origin may have been in a knotty outgrowth of the synovial membrane of the capsule of the intermetacarpal joint, and he thinks that, by pressure and steady growth, it had hollowed the space in which it lay.

II. **Division of the Os Trapezoides into Dorsal and Palmar Trapezoids.**—In this case the trapezoid was divided obliquely into two parts, of which the dorsal was the larger, oval in shape, and occupying, on the dorsal surface of the carpus, the space normally occupied by the trapezoïd; the palmar portion was smaller than the corresponding normal part, and cuboidal in shape. The upper portions of their contiguous surfaces were smooth, and covered with cartilage for articulation with one another, while the lower parts of the same surfaces were bound together with ligaments. The changes in the articular surfaces of the surrounding bones were those to be expected from such a division.

The great rarity of this condition is shown by the fact that this is the second case Gruber has seen after examination of 5,500 freshly dissected wrists. Between the time when he found his first case and that when he found the second he examined 3,700 wrists. Only two other cases have been reported, one by Fleach and one by Turner. Gruber is in doubt whether there were originally two cartilaginous trapezoids, or that two centers of ossification in one cartilaginous trapezoid, which did not fuse, had finally produced a joint at their synchondrosis, forming two bones articulating with one another.

III. **A Number of Rare Anomalies of the First Lumbrical of the Hand.**—Cases I and II. *Substitution of a Muscle springing from the Thumb for the First Lumbrical.*—In the first case the first lumbrical was wanting, the second and third situated normally, and the fourth, divided into two parts, inserted into the extensor tendons on the ulnar side of the fourth and the radial side of the fifth fingers. The place of the absent first lumbrical was supplied by a spindle-shaped muscle, which arose from the internal sesamoid bone in the capsule of the metacarpo-phalangeal joint of the thumb, and passed to the forefinger in the fold of integument between the thumb and forefinger, separated by a large triangular space from the adductor pollicis. It was inserted, as the normal lumbricalis, by a tendinous expansion into the tendon of the extensor longus digitorum to the index finger. In the second case the other parts were also quite abnormal. The middle phalanx of the index finger and the first lumbricalis were wanting; the second, third, and fourth lumbricals were inserted respectively into the ulnar sides of the extensor tendons of the index, middle, and ring fingers. The little finger was provided with no lumbricalis. The flexor tendons of the index finger divided over the interphalangeal joint into two portions, one being inserted in the first, the other in the last phalanx. The extensor indicis was inserted into the last phalanx. The muscle which supplied the place of the missing first lumbrical was very similar to the one described in the first case, the chief difference being that it arose from the internal sesamoid bone of the metacarpo-phalangeal joint of the thumb by two short tendons, which embraced the sheath of the flexor pollicis.

Case III. *Duplicature of the First Lumbrical by a Supernumerary Muscle springing from the Thumb.*—The presence of a supernumerary lumbrical was the only anomaly in this case. This was a slender muscle, which arose from the internal sesamoid bone of the metacarpo-phalangeal joint of the thumb, crossed the tendon of the adductor pollicis, passed between the first lumbrical and the outer head of the first interosseous, and united by a tendinous expansion with the insertion of the first lumbrical. The adductor pollicis was inserted between the origin of this muscle and the outer head of the first interosseous.

Case IV. *Substitution of a Muscle arising from the Anterior Annular Ligament (Ligamentum Carpi Volare Proprium) for the First Lumbricalis.*—In this case the place of the absent first lumbrical was supplied by a spindle-shaped muscle, which arose from the posterior surface of the anterior annular ligament some distance below its upper border, passed down in the palm of the hand near the flexor indicis, crossed the tendon of the flexor longus pollicis, the inner portion of the flexor brevis pollicis and the adductor pollicis, and was inserted into the tendon of the extensor longus digitorum on the radial side of the first phalanx of the index finger.

Case V. *Duplicature of the First Lumbricalis by a Supernumerary Muscle arising from the Anterior Annular Ligament (Ligamentum Carpi Volare Proprium).*—Here the normal lumbricalis was in position, and was supplemented by a muscle similar to that described in the fourth case, which arose from the posterior surface of the anterior annular ligament, and passed beneath the palmar fascia, beside the normal lumbrical, to be inserted with it into the tendon of the extensor longus digitorum.

Case VI. *A Second Head of the First Lumbricalis arising from the Anterior Annular Ligament (Ligamentum Carpi Volare Proprium).*—In this case the origin of the muscle was divided, one part occupying the normal origin of the muscle, the other arising from the lower border of the anterior annular ligament, and joining the first by means of a tendinous insertion.

IV. Occurrence of the Branch to the Index Finger of the Flexor Digitorum Sublimis as a "Venter Bifissus Digastricus Biceps."—In the lower part of the forearm the branch of the flexor sublimis digitorum which supplies the index finger was divided into two fleshy portions, which became tendinous, and were united in another fleshy portion in the palm of the hand, which in turn became tendinous, and was inserted in the normal manner into the lateral margins of the second phalanx. The palmar portion seemed to be a direct continuation of the tendon of the ulnar division, and received the tendon of the radial division in the lower half of its radial border. The fleshy portion in the palm was placed behind the anterior annular ligament and the palmar fascia. It commenced at about the upper border of the ligament, and ended at the metacarpo-phalangeal joint of the index finger. It received also a broad, fleshy accessory portion from the lower border of the anterior annular ligament. A similar combination of anomalies in a single tendon has never before been reported, to Professor Gruber's knowledge, and the rather long name he has given it seems to be justified.

V. A Rudimentary Musculus Obliquus Abdominis Externus Accessorius.—This muscle was found symmetrically placed on each side between the external and internal oblique muscles, arising from the posterior third of the cartilage of the tenth rib, passing obliquely downward and inward, to be inserted into the sheath of the rectus abdominis 7 ctm. below a horizontal line drawn through the umbilicus and 13 ctm. above the pubic bone. It measured 16 ctm. long, 3 mm. broad, and 2 mm. thick.

The Synovial Pouches and Sheaths of the Tendons of the Palm of the Hand.—Extensive observations have been made by Von Rosthom ("Arch. f. klin. Chir.," "Ctrlbl. f. Chir.," 1888, No. 5) regarding these synovial pouches which lead him to the following conclusions:

The tendons passing from the front part of the forearm to the hand are united by loose connective tissue into a common bundle and receive the vessels and nerves serving for nourishment through a membrane (*Gekröse*) extending toward the dorsum. Beneath the annular ligament are usually two synovial pouches passing through the same sheath, best named the radial and ulnar synovial pouches of the palm. The first of these incloses only the flexor tendon of the thumb, while the other incloses the flexor tendon of the fifth, and perhaps of the fourth, digit. The flexor tendons, both deep and superficial, of the second and third digits lie entirely outside either synovial pouch. In the newly born the flexor tendons of all the digits have separate synovial sheaths, not joined to the carpal pouches, but later the sheaths of the tendons of the thumb and little finger gradually approach the carpal pouches until they fuse and produce the condition considered to be the rule in adults. On the other hand, the deep flexor tendons of the three middle digits retain in adult life closed, separate phalangeal synovial sheaths having no communication with the carpal pouches. Of the tendons of the superficial flexors, those of the second and third digits lie, as has been said, entirely outside the carpal pouches. For the most part they are inclosed only by loose connective tissue, but sometimes they present quite independent, closed, genuine synovial sheaths, especially that of the index finger in hard workers. Those of the fourth and fifth digits are, during their course, in great part surrounded by sheaths, which are, for a considerable distance, in free communication with the ulnar pouch, and must therefore be considered integral parts of the pouch. Three carpal pouches may occasionally be found. Von Rosthom has never observed any communication between the carpal synovial pouches, or between them and the cavity of the joint. In the majority of cases the proximal extremities of the synovial pouches are found just on the distal side of the line of the radio-carpal joint, but this is quite subject to individual differences. The distal extremities vary less in position; on the ulnar side they are, as a rule, 2 ctm. above the metacarpo-phalangeal articulation of the little finger; on the radial, at the junction of the middle and lower thirds of the first metacarpal bone. The radial pouch is the smaller and the more slender, except in its proximal portion, where it is broader than the ulnar. Both pouches when distended have an hour-glass shape, because they are bound across by the anterior annular ligament.

Relations of the Pelvic Peritonæum as shown by Frozen Sections, with Special Reference to Suprapubic Cystotomy.—The object of Dr. Strong, in the paper read by him at the International Medical Congress ("Ann. of Surg.," January, 1888) before the Section in Anatomy, was to demonstrate whether, in order to perform suprapubic cystotomy without endangering the peritonœum or doing undue violence to the connective tissue back of the pubes, the bladder should be empty or partially filled, either alone or in connection with a distended rectum. The bladder and rectum being empty, the apex of the bladder and the peritoneal reflection are a little above the arch of the pubes. In moderate distension of the bladder the peritoneal reflection is below the apex. Distension of the rectum alone elevates the base of the bladder, but does not raise materially the vesico-abdominal fold of peritonæum. Distension of the bladder alone, in thin subjects particularly, requires a relatively greater amount of fluid to elevate the peritoneal reflection, as the bladder is not crowded against the abdominal wall, but rather falls away from it. When the distended bladder is pressed forward by distension of the rectum, the peritoneal reflection is lifted, and can be lifted highest by a moderate distension of each viscus, the rectum being distended first. Air injected into the bladder tends to lift it and the peritoneal reflection out of the pelvis better than water. In very fleshy subjects, with flabby or pendulous abdominal walls, the bladder is relatively freely movable.

Thyreoid Gland.—Whitehead ("Lancet," March 10, 1888) thus briefly describes the gross structure of the thyreoid gland:

It consists of two lateral lobes, one on each side of the trachea, connected by a transverse portion called the isthmus, which passes in front of the second and third cartilages of the trachea, to which it is attached by a firm layer of fascia. Sometimes the gland is supplemented by a third lobe situated on the left side of the upper part of the isthmus, and again, less frequently, a lobe exists which passes behind the trachea and in front of the œsophagus. These supernumerary thyreoids are much more frequently found in dogs than in man. They vary in size from that of a millet-seed to that of a filbert. Although the normal thyreoid only weighs about two ounces, the vascular supply is very great. "It has been estimated that 'the sum of the sectional area of the thyreoid arteries is more than half that of the cerebral arteries,' and the arteries during disease have been found augmented to a third of an inch in diameter." It is surrounded by a fibrous capsule, from the inner surface of which are derived trabeculæ of connective tissue penetrating into the interior of the mass and forming the stroma of large alveolar spaces, which are abundantly supplied with blood-vessels and lymphatics. The acini are lined with epithelium which secrete from the blood a glairy fluid which is reabsorbed in health by the lymphatics.

Dr. Hale White (*ibid.*, March 17, 1888), after an examination of forty thyreoids, says that the size is very variable, being, as a rule, smaller in adults over fifty than in those under that age. Its shape also is inconstant. The vesicles average one twenty-fifth of an inch in diameter. The more distended the vesicle, the flatter its epithelium, and the less the connective tissue between the vesicles. Parenchymatous cells, leucocytes, and red blood-corpuscles can all immigrate into the vesicles and there, together with perhaps the epithelial cells, form a granular débris. Indentations on the edge of the colloid matter and holes in its substance are due to the invasion of parenchymatous cells and possibly other cells. Sometimes the colloid matter has a double contour, and at times contains oxalate of lime and cholesterine crystals. None of these changes can be associated with any particular disease. The amount of connective tissue is variable.

Peculiar Ossification of the Occipital Bone.—Dr. Campbell describes ("Glasgow Med. Jour.," Feb., 1888) a skull in which the tabular or supra-occipital portion of the occipital bone was divided into two almost equal portions by a suture extending between the two lateral angles immediately above the external occipital protuberance. The upper portion was again divided symmetrically into three distinct pieces, a median and two lateral of about equal size, and united by deep, finely serrated sutures. He thinks they were not large Wormian bones because there were two small ones present in the lambdoidal suture, and, as the entire bone above the occipital protuberance was involved, the condition seemed to be rather an instance of the interparietal bone found in some of the lower animals, as the rodents, being represented in man. "The explanation of the condition is to be looked for in the process of ossification of the supra-occipital portion of the occipital bone which commonly starts from four centers, two below in the cartilaginous base of the skull and two above in membrane, so that probably in the present case the two centers below formed in the cartilage fused and remain distinct from the centers above formed in membrane, of which it is likely there were four, two uniting to form the central piece and remaining distinct from the one on each side, forming the separate pieces of bone."

Remarkable Vaginal Septum.—The following condition is described by Dr. Davis as found by him in a German woman, twenty-one years of age, at that time in the first stage of labor ("Ann. of Gynæcol.," March, 1888):

The otherwise normal external generative organs inclosed complete rudimentary external female generative organs, the labia of the rudimentary pudendum being covered with integument, and the intravaginal extension with mucous membrane identical in appearance with the surrounding mucous membrane of the vagina, furnished with cristæ except at the part attached to the cervix uteri, where it was aponeurotic and fibrous. It formed a broad, thick, double septum dividing the neck of the uterus and vagina. In contraction of the sphincter muscles the abnormal part would contract and become rigid also, showing a complete and perfect relation to the sphincter vaginæ and ani, all being rings of the same muscle. Dissection of the rudimentary apparatus after removal revealed normal vaginal tissue, and demonstrated that the vaginal muscle in its return from the sphincter ani split or gave off enough fibers to form a second or intravaginal ring.

Nervous Anomalies.—Birmingham notes these anomalies ("Lancet," March 3, 1888): 1. A spinal accessory nerve ending in the sterno-mastoid, without giving any branches to the trapezius, which was supplied by the third and fourth cervical nerves. 2. Buccal branch of the inferior maxillary nerve absent; its place taken by a nerve arising from the orbital branch of the superior maxillary division of the fifth nerve, which pierced the outer wall of the orbit and ran down to be distributed as a normal long buccal. 3. A nerve larger than the long pudendal, arising by two roots from back of sacral plexus, corresponding to the second and third sacral nerves, piercing the great sacro-sciatic ligament, crossing and communicating with the long pudendal, distributed to the skin of the upper half of the inner aspect of the thigh. 4. A nerve to an axillary muscular arch, springing, without communicating with any other nerves, from the inner cord of the brachial plexus, close to the origin of the nerve of Wrisberg. 5. A small occipital nerve divided into two parts, the posterior crossing the occipital triangle obliquely, passing under the trapezius, piercing the muscle two inches from its insertion, giving off no branches, and returning again to the posterior border of the sterno-mastoid to be distributed with the rest of the nerve. 6. The origin of a median nerve by three pairs of heads; one head in each pair came from the inner, the other from the outer cord of the brachial plexus, the artery passing between the heads. The first pair had a high origin, the second was the largest, and situated at the normal level; the third pair, the smallest, joined the others three inches down the arm. 7. Absence of the nerve of Wrisberg arising from the inner cord of the plexus; its place taken by a branch of the first dorsal nerve, which ran outward between the pleura and the first internal intercostal muscle, pierced the thoracic wall and reached the axilla. The distribution was that of the nerve of Wrisberg. This anomaly he has found three times.

Brooks (*ibid.*) notes a case in which the branch of the median to the first lumbricalis was large, pierced that muscle, and united to form an arch with a twig from the branch of the median which divides to supply the contiguous sides of the index and middle fingers. This lay under the flexor tendon of the index finger, gave two twigs to the metacarpo-phalangeal joint of the index finger and one to the first dorsal interosseous muscle, supplying mainly the distal part, as the proximal part was supplied, as it normally is, by a branch from the deep palmar division of the ulnar.

Overlapping of Nerves.—Brooks (*ibid.*) read a paper on the distribution of the cutaneous nerves on the dorsum of the hand, showing that these nerves overlapped each other rather than anastomosed. He had demonstrated the overlapping of the radial and dorsal branches of the ulnar in several cases. In the case which he examined with the greatest care he found they overlapped in their distribution over the index, middle, and ring fingers, with a corresponding area on the back of the hand. He had also traced filaments of the musculo-cutaneous and the external cutaneous branches of the musculo-spiral overlapping the radial and ulnar, the musculo-spiral in one case reaching the metacarpo-phalangeal articulation of the little finger. He had found the palmar nerves taking part in the dorsal supply of all the fingers and thumb; in several cases he had traced strong branches of the median passing under the thumb-nail and ramifying in the bed of the nail.

Rectum.—Otis ("Ctrlbl. f. Chir.," 1888, No. 12) describes carefully the sacculi and folds of the rectum. The chief folds are two or sometimes three in number, are crescentic, and occupy rather more than one half the periphery of the rectum. The first is on the right side 6·5 ctm. above the anus, the second on the left side 2·5 ctm. higher, and the third is on the left side 4 to 6 ctm. high. Often the distance between them is so slight that they unite to form a ring about the rectum. On the outer walls of the rectum are several wrinkles which are ordinarily supposed to be dependent on the flexure of the gut. This he claims is not the true explanation, but that they are the same as the similar wrinkles of the colon, caused by the longitudinal fibers upon whose development their depth depends. He traces the longitudinal fibers to pass in such a manner after leaving the sigmoid flexure as to form anterior and posterior ligaments for the rectum. Numbers of bands formed by the circular fibers can be found, an especially marked band being usually known as the third sphincter.

Miscellany.

The late Dr. Agnew.—At a meeting of the New York Ophthalmological Society, held on Monday, May 14, 1888, the following reports were read:

The New York Ophthalmological Society records with profound sorrow the death of one of its founders and original members, Dr. Cornelius Rea Agnew, who died of peritonitis, on April 18, 1888, aged fifty-seven years, seven months, and twenty days.

Dr. Agnew was president of this society during the years 1864 and 1865, and was for many years a constant attendant at its meetings. He took a leading part in its scientific discussions, and his opinions, delivered in well-chosen words, were always listened to with that respect to which his vast clinical experience and his sound judgment entitled them. For over twenty years Dr. Agnew ranked with the foremost ophthalmologists and otologists of the world, and his original contributions to practical, and especially to operative, ophthalmic and otic science, though not comparatively numerous, were exceedingly valuable. The method devised by him for the removal of secondary cataract has long been referred to and described in all the text-books upon diseases of the eye, and is still accepted as the best method of operating in properly selected cases. His methods of removing foreign bodies from the cornea when they are imbedded so deeply as to project into the anterior chamber, which was published, with a wood-cut, in the "Medical Record," vol. i, No. 11, 1866, is still resorted to as the only available operation in such cases. Later, in 1874, he also published a method of removing a foreign body deeply imbedded in the cornea by trephining.

The operation for the removal of chalazion, described in Wells's "Treatise on Diseases of the Eye" (4th Am. ed., Phila., 1883, page 90), by making an incision through the margin of the lid into the tumor, and then scooping out the contents, was devised by him, though he never published it.

In the "American Practitioner" for January, 1871, he published a paper on the "Treatment of Lacrymal Diseases." In this paper were outlined the methods of treatment which have since been pursued by many ophthalmic surgeons.

In 1875 he published a paper on "Canthoplasty as a Remedy in Certain Diseases of the Eye," in which he made the different steps of the operation clear by means of wood-cuts, and in which he modified the operation by recommending a division of the external canthal ligament.

His "Method of Operating for Divergent Squint," by advancement of the internal rectus and tenotomy of the externus, described by him at the meeting of the American Ophthalmological Society, held at the Massachusetts Charitable Eye and Ear Infirmary in 1886, and published in the transactions for that year, has since been practiced by ophthalmic surgeons everywhere. He also published a "Contribution to the Subject of Strabismus" in the "Transactions of the American Ophthalmological Society" for 1870.

His last and, perhaps, most valuable contribution to operative surgery of the eye was his "Operation with a Double Needle, or Bident, for the Removal of a Crystalline Lens dislocated into the Vitreous Chamber," published in the "Transactions" for 1885. Other papers published by Dr. Agnew were "A Method of dressing Eyes after Cataract Extraction" (1869), a "Contribution to the Statistics of Cataract Extraction of One Hundred and Eighteen Cases" (1874), a "Case of Double, extremely Minute, and apparently Congenital Lacrymal Fistula" (1874), "Consecutive Enucleation of both Eyes for Recurring Glioma" (1875), "Cases of Ophthalmic Diseases in which Enforced Exposure of the Eyes to Light and Air was Salutary" (1876), "A Preliminary Analysis of Ten Hundred and Sixty Cases of Asthenopia" (1876), "Cases of Persistent Pupillary Membrane" (1880), "The Insufficiency of the Ophthalmoscope as the Sole Test of Errors of Refraction" (1880), "Near-sightedness in the Public Schools," "Medical Record," vol. xii, No. 3, and, besides these, numerous clinical lectures, cases, and papers on subjects not medical.

Dr. Agnew was taken away when in the meridian of his usefulness. At the time of his death he was a director of the Manhattan Eye and Ear Hospital, of the Brooklyn Eye and Ear Hospital, a trustee of the New York Academy of Medicine, of Columbia College, of the College of Physicians and Surgeons, a governor of the Woman's Hospital in the State of New York, a manager of the Hudson River State Hospital for the Insane, and of the New York Skin and Cancer Hospital. His hand was in many great and noble works of charity, and his sympathies were extended to everything that elevates and ennobles humanity. Those who knew him most intimately considered him the highest type of a true Christian gentleman, and felt the absolute integrity of the man in everything that he did.

His loss will be incalculably felt in this city and in this society.

[Signed]
Henry D. Noyes,
D. B. St. John Roosa,
J. S. Prout,
David Webster.

The late Dr. E. G. Loring.—Dr. Loring joined the New York Ophthalmological Society, January 13, 1868. He was elected president of the society, January 12, 1874. He died suddenly in this city, April 23, 1888. During the twenty years in which he was a member of this society he was a constant attendant at its meetings, no one was more beloved than he for his many social qualities, and in the scientific work of the society his word was listened to with a respect accorded to but few. It is fitting that a brief sketch of his life should be entered upon our minutes.

Dr. Loring was born in Boston, September 28, 1837. He was a son of Judge Edward Greely Loring. For a short term a member of the class of 1861 at Harvard College, he went abroad and began the study of medicine in Italy. For three years he was enrolled as a student at Florence and Pisa, and at the university of the latter place he was a devoted student in anatomy of Professor Duranti. In 1862 he returned to America, and in 1864 graduated at the Harvard Medical School, winning the Boylston Prize Essay.

Upon receiving his degree in medicine, Dr. Loring devoted himself to the study of ophthalmology under the direction of Dr. Hasket Derby, of Boston. He was appointed ophthalmic externe by Dr. H. W. Williams at the City Hospital, and subsequently served for a short term at the Massachusetts Charitable Eye and Ear Infirmary.

In 1865 he established himself in practice in Baltimore, remaining there but little over a year, when he came to New York to become associated with the late Dr. C. R. Agnew. Four years later this partnership was dissolved, and until his death Dr. Loring practiced medicine in New York city.

He was a surgeon of the Manhattan and Brooklyn Eye and Ear Hospitals, and subsequently a consulting surgeon of the latter institution. He was in 1874 appointed an ophthalmic surgeon of the New York Eye and Ear Infirmary, and held a similar position at St. Luke's Hospital.

Original in thought, scientific in method, bold in execution, Dr. Loring was a skillful surgeon and a thoroughly trained physician. As an author he was conspicuously known both in this country and abroad for his original contributions to medical literature. In this brief memoir it would not be in place to discuss the value and extent of his literary work. His writings were upon nearly every subject embraced in the science of ophthalmology. His "Text-book of Ophthalmoscopy," the completion of the second volume of which occupied the last days of his life, will remain for all time his most lasting memorial.

Dr. Loring made the refraction ophthalmoscope a working instrument, to which nothing of any importance, except the tilting mirror, has been added since. By whatever name the latest manufacture is known, this instrument is still the Loring ophthalmoscope, vastly better than all its predecessors.

In the discussions of this society he was frank and straightforward in his action and speech, scholarly in his address; the type of a brilliant, honest, and independent man. A keen observer, unfettered by the traditions of the schools, his opinions based on sound anatomical and physiological knowledge, he was a hater of sham, a follower of truth for the truth's sake.

Richard H. Derby,
[Signed] D. B. St. John Roosa,
Arthur Mathewson.

A Bequest to the New York Academy of Medicine.—The will of the late Dr. Wesley M. Carpenter contains the following clauses:

"First. The sum of five thousand dollars to the New York Academy of Medicine, with which to found a lectureship, to be known as 'The Carpenter Lectureship.' This sum shall be paid to the trustees of said New York Academy of Medicine, who shall expend the interest thereon, annually, for one medical lecture. The lecturer shall be selected and the time at which the lecture shall be delivered shall be determined by a majority of the Council of the Academy, and the Academy shall publish the lecture in pamphlet form immediately after its delivery.

"If the Academy will not accept this gift and guarantee my executor that the above stipulations will be carried out faithfully, the proposed donation shall remain to be disposed of in my estate."

The Indorsement of Nostrums.—The following resolutions were adopted at the thirteenth annual session of the State Medical Society of Arkansas, held at Fort Smith, April 25, 26, and 27, 1888:

Resolved, That the members of the State Medical Society of Arkansas have for years observed with pain and mortification the patronage given to charlatanism in all its multifarious aspects by the religious press of our country.

Resolved, further and most specifically, That the appearance in religious papers, ostensibly published for the inculcation of truth and morality, of serious homilies on prayer and praise, side by side with cures for consumption, cancer, Bright's disease, and other incurable ailments to which an editorial indorsement is often given, as well as secret preparations under the cloak of remedies for disease, but really intended for purposes of fœticide and other immoral uses, largely tends to shake the confidence of the profession of medicine in the integrity and purpose of the managers and editors of such journals.

Resolved, further, That it has been the well-known custom of the profession to render services gratuitously to clergymen, which we do not regret nor do we propose to recall, yet we must assert that the frequent occurrence of indorsements and recommendations of the clergy of peripatetic doctors and advertising charlatans has in many instances been the only reward of our gratuitous services.

Resolved, further, That we are aware that the editors of religious newspapers admit the painful situation in which these advertisements place them, and attempt to excuse themselves by saying that it is necessary to take these advertisements in order to obtain means to conduct their papers; but in the language of orthodox theology we would say: "Put behind you that damnable doctrine that we must do evil that good may come."

Resolved, further, That, as a society, we declare that the continued perpetration of the above offenses by some of the clergy and religious press brings harm to the bodies of their constituency, and damages materially their influence upon the thinking class of the medical profession.

Resolved, That the secretary be instructed to furnish copies of these resolutions to the religious and medical press of the United States, to the American Medical Association, and to the State medical societies, soliciting their co-operation in bringing about a correction of these grievous and palpable errors.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending May 25th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending May 5th corresponded to an annual rate of 18·7 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 15·1, and the highest in Salford, viz., 28·1 in a thousand. Small-pox caused 8 deaths in Sheffield, 2 in Bristol, 1 in Oldham, and 1 in Hull.

London.—One thousand four hundred and twenty-nine deaths were registered during the week, including measles, 14; scarlet fever, 23; diphtheria, 15; whooping-cough, 87; typhus, 1; enteric fever, 11; diarrhœa and dysentery, 19. The deaths from all causes corresponded to an annual rate of 17·4 in a thousand. Diseases of the respiratory organs caused 287 deaths; different forms of violence, 39; and 4 suicides were registered. In greater London 1,812 deaths were registered, corresponding to an annual rate of 17·1 in a thousand of the population. In the "outer ring" 24 deaths from whooping-cough and 5 from fever were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending May 5th in the sixteen principal town districts of Ireland was 25·1 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 14·5, and the highest in Drogheda and Kilkenny, viz., 38·1 in a thousand. In Dublin 147 deaths were registered, including 7 from whooping-cough; enteric fever, 2; measles, 1; diarrhœa, 1; and dysentery, 1.

Scotland.—The deaths registered in eight principal towns during the week ending May 5th corresponded to an annual rate of 19·5 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 14·4, and the highest in Glasgow, viz., 22 in a thousand. The aggregate number of deaths registered from all causes was 493, including 6 from measles; scarlet fever, 3; diphtheria, 9; whooping-cough, 11; fever, 3; and diarrhœa, 3.

Bordeaux.—Five hundred and four deaths were registered during the month of April, 1888, including typhoid fever, 9; and diphtheria and croup, 16.

Havana.—The sanitary inspector reports 7 deaths from yellow fever and 8 from small-pox during the week ending May 12, 1888.

Hobart.—Sixty-six deaths were registered during the month of February, 1888, including 9 from enteric fever.

Mortality Table, Foreign Cities.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	May 5.	2,260,945	1,010	..	....	5	....	13	4	48
Glasgow	May 5.	545,678	223	..	....	...	....	....	1	8
Warsaw	April 21.	444,814	233	..	....	5	....	....	1	4
Warsaw	April 28.	444,814	233	.	....	3	....	....	....	7
Calcutta	April 7.	433,219	252	68	....	..	....	....	....	....
Amsterdam	May 5.	389,916	178	..	....	....	....	....	....	5
Rome	March 31.	382,973	202	..	....	4	3	2	1	....
Copenhagen	April 24.	300,000	141	..	....	....	....	....	2	6
Copenhagen	May 1.	300,000	116	..	....	....	....	....	2	8
Munich	April 28.	275,000	143	..	....	....	....	....	6	5
Palermo	May 5.	250,000	108	..	....	....	....	....	4	3
Belfast	April 28.	227,022	124	..	....	....	....	....	1	....
Havana	May 5.	208,000	112	..	6	7	....	1	....	....
Genoa	May 5.	179,505	96	..	....	....	1	....	....	....
Leipsic	May 5.	170,000	68	..	....	....	....	....	1	1
Trieste	April 21.	154,500	94	..	....	....	....	....	1	1
Trieste	April 28.	154,500	89	..	....	1	....	....	....	1
Stuttgart	May 5.	125,510	43	..	....	....	....	....	....	....
Bremen	April 28.	122,000	50	..	....	....	....	....	....	....
Havre	May 5.	112,074	75	..	....	5	2	....	....	....
Barmen	April 28.	109,000	44	..	....	....	....	....	....	....
Leghorn	May 6.	101,718	32	..	....	....	....	....	....	....
Mayence	April 28.	65,802	31	..	....	....	....	....	....	1
Cienfuegos	May 7.	40,753	17	..	1	4	....	....	....	....
Vera Cruz	May 10.	23,800	18	..	....	....	....	....	....	....
Gibraltar	April 29.	23,631	9	..	....	....	....	....	....	....
Antigua	April 29.	15,847	6	..	....	....	....	....	....	....
Cape Haytien	May 6.	15,000	5	..	....	....	....	....	....	....
Cartagena, Cola.	April 21.	13,000	11	..	....	....	....	....	....	....
Cartagena, Cola.	April 30.	13,000	12	..	....	....	....	....	....	....
Matamoras	May 5.	12,000	9	..	....	....	....	....	....	....
Turk's Island	April 25.	5,000	3	..	....	....	....	....	....	....

UNITED STATES.

Dr. Cyril Williams, secretary of the health department, San Francisco, Cal., writes as follows:

"San Francisco, Cal., *May 9, 1888.*

"I inclose copy of a letter to the health department, New York, March 20th; also a paragraph from one of to-day's San Francisco papers. The health officer desires to call your attention to the speedy manner in which infected passengers are sent west from the Atlantic ports."

(Extract from newspaper inclosed.)

"The steamship Main, from Bremen, which had been detained at quarantine for two days on account of a case of small-pox being discovered on board, reached Pier 8, Locust Point, Baltimore, yesterday. Her 1,147 emigrants were discharged and sent west by the Baltimore and Ohio Railroad.—'Dispatch.' That is the way they do it in the East. On this coast she would have been kept in quarantine about a month."

(Inclosure.)

"San Francisco, Cal., *March 20, 1888.*

"Dear Sir: Yesterday Anton Anderson, aged twenty-one, a native of Norway, was sent to the small-pox hospital. He stated that he came from Glasgow by the steamship Circassian. Immediately on landing at New York he left for this place, arriving here on the 17th instant by the Southern Pacific Railroad. According to his account, he was taken sick on the 11th, the eruption appearing on the 14th. It is a bad case of confluent small-pox.

"The Health Officer, New York."

Key West, Fla.—The medical officer in charge of the Marine-Hospital Service reports, under date of May 17th, that "the master of a ponging-schooner came ashore last night and was found this morning to be suffering with small-pox. The vessel had been absent from here for twelve days. The case has been sent to the pest-house. The crew were collected, put on board, and sent in vessel to the local quarantine."

Memphis, Tenn.—The medical officer in charge of the Marine-Hospital Service reported by telegraph, under date of 23d instant, "two cases of small-pox reported in city."

The following letter has been received from Dr. C. P. Wilkinson, president of the Board of Health of the State of Louisiana:

"New Orleans, *May 17, 1888.*

"I have reliable information that baggage from Havana is transferred from steamer to railroad at Port Tampa without any disinfection whatever, and is distributed to various points in the United States."

Upon receipt of the letter, the following telegram was sent to Dr. J. P. Wall, president of the Board of Health of Tampa, Fla.:

"Washington, D. C., *May 19, 1888.*

"New Orleans Board of Health states that baggage from Havana is transferred from steamer to railroad without disinfection. Is this correct?"

To which a reply was received as follows:

"Tampa, Fla., *May 21, 1888.*

"Disinfection on steamer in hold. Having disinfecting apparatus fitted up at Port Tampa. This is the new wharf of Plant Steamship Line, nine miles from town. New Orleans need not fear anything from here. Will write you. Plant City has been thoroughly cleaned up and disinfected, and free of sickness. J. P. Wall,

"*President Board of Health.*"

Pittsburgh, Pa.—Information has been received from unofficial sources that three cases of glanders have appeared at Pittsburgh.

The Massachusetts Medical Society.—The one hundred and seventh annual meeting will be held in Boston, on Tuesday and Wednesday, June 12 and 13, 1888. The following papers are included in the programme: "Private Mental Sanitaria and the Inebrieties," by Dr. A. W. Thompson, of Northampton; "Therapeutic Nihilism," by Dr. M. D. Clarke, of Haverhill; "Uterine Displacements and their Influence on the General Nervous System," by Dr. F. H. Davenport, of Boston; "The Modern Practice of Surgery," by Dr. O. K. Newell, of Boston; "The Treatment of Hypertrophy of the Prostate, with especial Reference to Operative Measures," by Dr. F. S. Watson, of Boston; "A Study of Phthisis and Pneumonia in Massachusetts; Statistical and Climatological," by Dr. W. E. Smith, of Boston; "Postural Treatment of Constipation," by Dr. E. T. Williams, of Roxbury; "The Surgical Treatment of Malignant Growths," by Dr. M. H. Richardson, of Boston; "The Value of Corrosive Sublimate as a Practical Disinfectant," by Dr. W. B. Bills, of Cambridge. The annual discourse will be delivered by Dr. B. Joy Jeffries, of Boston.

ANSWERS TO CORRESPONDENTS.

No. 187.—At Newport, R. I., June 11, 1889.

No. 188.—Our impression is that you are liable for the amount charged, if no objection was made at the time the attendant called in the other physician.

No. 189.—In New York only those institutions which belong to the association receive a proportion of the collection, the distribution of which is controlled by by-laws of the association, but is substantially on the basis suggested by you.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, June 9, 1888.

Original Communications.

PLEURISY AS A PREDISPOSING CAUSE OF PHTHISIS PULMONALIS.*

By BENJAMIN F. WESTBROOK, M. D.,
BROOKLYN.

Now that it has been proved almost beyond a doubt, by the researches of modern bacteriologists, that the *Bacillus tuberculosis* is the exciting cause of phthisis pulmonalis, it remains for us, as practical physicians, to inquire whether there are any demonstrable local or general pathological conditions which may so affect the tissues as to render them specially liable to the invasion of this micro-organism.

In view of the fact that but one out of every seven of our population succumbs to this disease, it needs must be admitted that something of the nature of a predisposing cause is operative in susceptible individuals. Whether abnormal conditions of the pleura are, of themselves, capable of bringing about such a vulnerability of the tissues of the lung as to make them a favorable nidus for the development of the tubercle bacillus, it is difficult to say in the present state of knowledge. But that this is so in some persons is rendered strongly probable by the occurrence of such cases as I shall presently relate. In other instances, in which the development of a pleuritis, though non-tubercular, is shortly followed by the advent of pulmonary tuberculosis, the local inflammation may be taken as an indication of constitutional weakness, which would probably have led to the development of the major disease sooner or later. In this case the pleurisy would constitute a warning which should not be disregarded by either the physician or patient. Pleurisy has been so frequently observed as an antecedent, either immediate or remote, of tubercular disease of the lungs, that it has not failed to attract the attention of clinicians from the earliest times, and there has been much discussion as to the true relationship which the two diseases bear to each other. Without entering into the history of this discussion, which is undoubtedly quite familiar to my hearers, I will proceed at once to make a classification which will, I hope, serve to throw some light upon this much-vexed question.

Cases of pleurisy antedating the outbreak of phthisis of the lungs may be divided into five classes:

1. Those in which a pleurisy with effusion, occurring in a person apparently in good health, is immediately followed by evidences of pulmonary tuberculosis which usually runs a rapid course to its fatal termination. This is the phthisiogenic tubercular pleurisy *d'emblée* of Renaud.† It is a form of the disease which is frequently observed both in hospital and in private practice, and of which I have seen many instances. But as the pleurisy is undoubtedly tubercular in its origin, and forms but a part of the general disease, its discussion is not germane to our subject. Under this head might also be included the cases reported by Knaevenagel and Jaccoud,* in which caseous foci are found in the lung immediately subjacent to the inflamed pleura, from which foci Jaccoud maintains that auto-infection results.

2. This class includes those instances in which a serofibrinous pleurisy is followed by the slow development of chronic interstitial pneumonia—the fibroid phthisis of Sir Andrew Clark. Whether the interstitial formation of connective tissue in this disease is due to a simple extension of a low grade of chronic inflammation from the pleura inward to the interlobular and peribronchial connective tissue, or is the result of a very chronic tubercular process, is not, I believe, fully ascertained. But the final occurrence of distinct tuberculosis in such cases is to be looked for. The following case may be taken as fairly illustrative of the class:

Case I.—W. S., aged twenty-six, United States, oyster-opener. Admitted into the Methodist Episcopal Hospital, January 27, 1888. The patient says that up to three years ago he was always strong and well, and had never been subject to colds. His father had been a heavy drinker, and had died of "gangrene." His mother is alive and strong. No tendency to any lung trouble can be found to exist in the family. The patient has had gonorrhœa a number of times, and says that seven years ago he had a chancre, but this was not followed by any eruption. He has had rheumatism with the gonorrhœa. Up to a year ago he never drank any, but since that time he has taken a moderate amount of liquor. About three years ago, after exposure to cold and wet, he had a chill and epistaxis. This was followed by a prolonged illness that kept him in bed for four months. During this time he suffered from fever, headache, dyspnœa, loss of appetite, and diarrhœa. With these there was also a severe cough, considerable expectoration, and shooting pains in the left side and down the spine. During this attack the left chest was aspirated and a pint of fluid withdrawn. Improvement immediately followed upon the operation. During the next year he was very well, but at the end of this time he had a second attack, not so severe as the first. Six months later he had a third, but this was less severe than either of the previous ones. A needle was introduced at this time, but no fluid was found. About five months ago he had a "very heavy cold," which lasted for about three weeks, after which he felt very well until a week ago, when he had a very severe fall on the ice, striking on his back. The next day he began to have chilly sensations, lost his appetite, and developed a cough, fever, and diarrhœa. During his previous illnesses the expectoration was yellow, thick, and very tenacious, but now it is of a greenish-yellow color. The patient has headache a great deal of the time, no appetite, a cough with considerable expectoration, rather loose bowels, and pain over the left lung, especially behind.

On admission, the temperature is 101·8° F., and the respiration 39.

Physical Examination.—The respiration is rapid, the face is rather dusky, the lips are cyanotic, and the alæ nasi dilate with each inspiration.

Chest.—The left side is retracted and its movements restricted. The percussion-note is very dull in front from the third rib to below the nipple, and behind from the spine of the scapula to the inferior angle. Over the area of dullness the respiration is weak, with an occasional bronchial quality. Some friction-sounds are heard posteriorly. In front, at the apex, the breathing is tubular in character, with occasional moist râles. Vocal fremitus is absent over the left chest. On the right side the breath sound is harsh down to the third rib. Below that it is puerile. A specimen of sputum, examined by Dr. Eugene Hodenpyl, pathologist to the hospital, showed a moderate number of tubercle bacilli.

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* Read before the New York Academy of Medicine, May 17, 1888.

† J. Renaud, "La pleurésie tuberculeuse phthisiogène d'emblée," "Gaz. méd. de Paris," 1884; 7 sér., i, p. 517–519; 530–533.

* Jaccoud, "Curability and Treatment of Pulmonary Phthisis," New York, 1885, p. 69.

The larynx has the pale, waxy appearance characteristic of phthisis. Under the administration of tonics and alteratives, with complete rest in bed, the patient rapidly improved in strength and flesh, the fever entirely disappeared, and the cough and expectoration were very greatly diminished. When he left the hospital, March 3d, he expressed himself as feeling quite well, though the physical signs were unchanged. The original diagnosis of pleurisy with effusion was made by Dr. A. L. Loomis.

In view of the length of time which had elapsed since the onset of the primary disease, the long intervals of apparent good health which had intervened, and the rapid improvement under treatment, it is difficult to believe that the original pleurisy was other than a simply primary inflammation. Several similar cases might be recorded, but they are such as are familiar to every hospital physician, and it is unnecessary to introduce more than one as an illustration of the class. Besides those in which a clear history can be obtained, many others come into the hospital which, in all probability, are of the same nature, but their identification is impossible on account of the uncertainties of what the late Dr. Flint called a "retrospective diagnosis."

3. Those cases in which an acute or subacute attack of sero-fibrinous pleurisy, terminating in complete recovery, is followed, after some months, by the development of tuberculosis in one or both apices. They are usually observed in persons who are either constitutionally weak, or whose health has been injured by overwork, dissipation, or other debilitating influences. When there is a family history of tuberculosis, it can not be positively denied that the original pleurisy was specific in character; but this is rendered at least doubtful by the occurrence of the inflammation in the lower portion of the chest, and by the subsequent complete disappearance of all signs of it before the apex is invaded.

Case II.—T. J. N., aged twenty, United States, clerk, a patient of my colleague, Dr. Glentworth R. Butler, who kindly furnishes the following history: His mother and a maternal uncle died of phthisis. The patient was first seen by me on May 25, 1886. Very tall—six feet three inches. Had been in good health previously, though considered "delicate." For the past week he had been feeling out of sorts—tired all the time, appetite poor, tongue covered with white fur, pulse 86, temperature 99·5°. He explicitly denied the presence of any pain, excepting a slight frontal headache. Careful inquiry elicited the fact that in walking rapidly up stairs there was slight dyspnœa. No cough. Examination of the chest showed the physical signs of fluid in the left pleural cavity, the line of dullness and absence of respiratory murmur lying two inches above the angle of the scapula. He was put on half-drachm doses of syr. ferri iodid., t. i. d. The dose was soon increased to one drachm. Tincture of iodine was used freely over the side. Aspiration was refused. The fluid was rapidly absorbed, so that at the end of six weeks from his first visit there was only slight dullness remaining. The respiratory and voice sounds were clearly audible over the entire left chest, and the patient expressed himself as feeling perfectly well. He continued in good health until October 20, 1887, when he came to my office suffering with slight cough and hoarseness. The temperature was normal. The chest presented no abnormal signs. He felt well except that there were some laryngeal symptoms. Laryngoscopic examination showed subacute laryngitis and tracheitis. He improved slowly until the 29th of October, when he had a fever lasting four days, the temperature rising to 103° in the evening, with morning remission. This subsided under quinine. A daily and careful auscultation of the chest revealed nothing abnormal. After this he felt so well that I did not see him again for three weeks, when he came complaining of a slight dry cough and some slight pain and uneasiness in the left upper chest. The evening temperature was 99·5°. Examination of the chest at this time showed slight but unmistakable dullness at the left apex, fine râles with expiration and inspiration, and prolonged expiration. The chest was poorly developed. Expansion poor. Subsequently he had several slight hæmorrhages. The evening temperature ranged from 99° to 100°.

On the 18th of November, Dr. Butler sent him to me for treatment by the pneumatic cabinet. The physical signs at that time were the same as those described by the doctor. There was a well-marked catarrh of the pharynx, larynx, and trachea. In spite of the cabinet treatment, combined with the administration of vegetable tonics, there was no improvement in the pulmonary condition, though the catarrh of the upper air-passages was benefited by local applications. He left the city in the latter part of January, 1888, at which time the physical signs were much more marked than when first discovered. Since leaving the city and living in Texas he is much improved. He has gained in weight, eats heartily, has a normal temperature, and is much stronger.

Case III.—A. B., aged twenty-five, United States, salesman. Three brothers had died of phthisis. He was in good health up to September, 1886, when he had an attack of acute sero-fibrinous pleurisy of the right side. I saw him in consultation with Dr. T. M. Ingraham, of Flatbush, about two weeks after the beginning of his illness, at which time three pints of straw-colored serum were withdrawn by the aspirator. The operation was repeated at the end of another week, and another quart withdrawn. He subsequently developed an inflammation of the veins of the right lower extremity, supposed to be malarial in its origin. He finally made an apparently good recovery and resumed his business. During the winter of 1886 and 1887 he went South on business for the firm with which he was connected. During his absence he dissipated very freely. On his return, in June, 1887, he came to my office complaining of a cough, with a feeling of general malaise and occasional night-sweats. He presented no sign of emaciation, but the face was flushed, the pulse rapid, and the afternoon temperature 102°. On the most careful examination, I was unable to find any evidence of the pre-existence of the pleurisy on the right side, but there was dullness on percussion from the supra-clavicular region to the second intercostal space anteriorly on the right side, with broncho-vesicular respiration and fine mucous râles, heard with both inspiration and expiration. The tubercular disease, which was apparently complicated by a malarial toxæmia, ran a rapid course, and he died in the following autumn.

Case IV.—D. B., aged thirty-six, United States, agent. Admitted into St. Mary's Hospital, March 21, 1887.

One year ago the patient had been exposed to rain and had contracted a "severe cold." He had had a chill which had been followed by pain in the right side, and cough. A physician had been called in, who, on examination, had found that he had pleurisy with effusion, and had aspirated the right pleural cavity, obtaining a quantity of serum; this operation had been repeated some days later, the amount obtained being less at the second operation than the first.

Family history good. Admits alcoholic excess. Examination at the date of his admission to the hospital reveals the following: On the right side, dullness over the infra-clavicular space; posteriorly, dullness below the spine of the scapula; at the apex, broncho-vesicular breathing and fine moist râles, both on inspiration and expiration. Over the whole of the left side the breathing is harsh, with a few dry and moist râles at the apex. The patient only remained in the hospital about a week. His subsequent history is unknown.

In this case, though there was some dullness remaining at the right base, it was only that observed in many cases of ordinary innocuous pleurisy for some months after the fluid effusion has been absorbed. There were no râles or bronchial breathing, and nothing to indicate the presence of any active disease.

Cases of this kind, I believe, are not very numerous, but they are probably sufficiently common to have fallen under the observation of almost every one who has had much experience in the treatment of pulmonary disorders.

4. This class includes cases occurring usually in those of middle age or in the decline of life, in which a sero-fibrinous pleurisy has become chronic, and in which, on account of the density of the false membrane covering the lung and the diminished pliability of the parietes of the chest, absorption has not occurred. They are typical cases of chronic serous pleurisy which have either failed to be recognized, or been left to the mercy of that very unreliable agent, the *vis medicatrix naturæ*. While it is true that many such patients live for years without the supervention of any serious symptoms, it is nevertheless a fact that some of them finally develop tuberculosis, either in the lungs alone or in a general, disseminated form. The interval between the occurrence of the initial disease and the development of phthisis is so great, and the post-mortem appearances are so indicative of a very early stage of the latter process, that the pleurisy can not but be regarded as primary and simple in its character.

Case V.—P. B., aged sixty, native of Ireland, laborer, was admitted into St. Mary's Hospital, September 10, 1886.

The patient stated that he had first been taken ill the previous June, when he noticed a difficulty in breathing, fatigue from very slight exertion, and cough. He gave no account of any chill or fever. Since that time his condition had gradually grown worse, and of late he had frequently had night-sweats. He was considerably emaciated, and, upon examining the chest, it was found to be large and rounded, as is seen in the slight general emphysema of approaching senility. The left side was super-resonant throughout. On the right side, below the third rib anteriorly and below the spine of the scapula posteriorly, there was resonance upon percussion, and the respiratory and vocal sounds were absent. There was no inspiratory expansion below the third rib, and very little above it. The respiratory movements on the left side, though limited, were good for a man of his age. Below the right clavicle, on deep inspiration and coughing, there were occasional fine subcrepitant râles, and the expiration, though somewhat prolonged, was not more so than is common in this situation. There was no elevation of temperature; the pulse was strong—about eighty beats a minute. The sputa were not examined microscopically. Aspiration was attempted, and the needle, upon being introduced through the sixth intercostal space in the axillary region, could be moved freely in every direction, even when introduced its entire length. After the evacuation of four or five ounces of a yellow serous fluid no more could be obtained, but the continued use of the aspirator was productive of great pain, and the intercostal spaces were visibly depressed. The patient's condition was otherwise so good that, though there were slight signs, as before stated, which led us to fear the beginning of a tubercular deposit at the apex, my colleague, Dr. Glentworth R. Butler, and myself thought that it would be justifiable to attempt to relieve the patient by making a resection of two or three ribs on the affected side.

On the 4th of October the patient was anæsthetized, and we made an incision about three inches long, over the sixth rib, the middle of the incision corresponding to the midaxillary line. The periosteum was separated for about the distance of an inch and a half, and a piece of the rib of about that length removed with the chain-saw, care being taken not to wound the periosteum on the inner side of the rib. A similar incision was then made over the seventh rib, and a portion an inch and a half long removed. The incisions were closed by deep and superficial sutures. The whole was then sprinkled with iodoform and dressed with the manilla-paper dressing of Dr. George R. Fowler.

On the 9th of October, five days after the operation, the dressings were removed, and primary union was found to have occurred in both wounds. There had been no elevation of temperature or other bad symptom. On the 18th it was observed on palpation that the cut ends of the ribs had come together. There was still some pain in the neighborhood of the cicatrices, but only on coughing or deep inspiration. His appetite was better and the cough diminished. He was allowed to get up and go about the ward.

On the night of October 24th, twenty days after the operation, he became very restless and delirious. On the 25th he was more quiet, but his speech became incoherent and he passed into a condition of mental hebetude and was very feeble. The pulse was rapid and weak, and the respiration corresponded. There was no elevation of temperature.

On the 27th the delirium increased in violence so that constant restraint was necessary in order to keep him in bed; still no elevation of temperature; pulse very feeble. On the 29th the bladder and rectum became paralyzed, and it was necessary to use the catheter. The restlessness and delirium progressed until 10 p. m., when he died.

At the post-mortem examination, which was made on the following day, I found that the union of both wounds was complete throughout. The cut ends of the ribs were in contact and firmly united by fibrous tissue without any ossification. On removing a portion of the thoracic wall, the lung was found firmly contracted and carnified, adherent down to the third rib and to the mediastinum as far down as the diaphragm, leaving a space between the lungs and the ribs about one inch in depth, which was filled with serous fluid, traversed by many strong fibrinous bands, some of them apparently in the process of conversion into connective tissue. The upper portion of the lung contained numerous miliary granulations, without any patches of lobular hepatization or caseation; it was crepitant throughout, and when thrown upon water floated buoyantly. The lower portions were collapsed, but still pervious to air—that is, they did not sink in water. The apex of the left lung also contained miliary granulations corresponding in appearance to those in the right, all in the first stage, but they were not sufficiently numerous in either lung to give rise to any marked physical signs. Neither the lower portion of the upper lobe nor the lower lobe of the left lung presented any pathological appearances. The heart showed nothing beyond some dilatation of the right side. The abdominal organs showed no lesions except in the kidneys, where there were fine gray and grayish-yellow granulations. I was not permitted to examine the brain. Microscopical examination of the lungs and kidneys showed that the miliary granulations were tubercular. Judging from the clinical history, death was due to tubercular meningitis.

Case VI.—M. A., aged thirty-four, native of Ireland, occupation stableman, admitted into St. Mary's Hospital, March 13, 1884.

For the past twelve years the patient had had a troublesome cough during the winter months, which had almost entirely disappeared in the summer. During the past winter the cough had been much less, but he had developed marked dyspnœa, with expectoration of muco-purulent matter, colliquative sweats, and loss of flesh and strength.

Physical Examination.—Right side: dullness from the second interspace to the free border of the ribs, respiratory murmur weak above the second interspace, and below weak tubular breathing. Left side: a few râles with inspiration. Suspecting fluid in the right pleural cavity, an aspirating-needle was introduced, and one pint of flocculent fluid withdrawn. Five days later the operation was repeated, but no fluid obtained. When the needle was withdrawn, a small quantity escaped through the puncture. A third aspiration was attempted, but no fluid was found. The patient was anæsthetized, and an incision made over the sixth rib, the periosteum separated for the distance of about two inches, and a piece of the rib removed with the chain-saw. Adhesions were found between the pleura and the chest-wall, which appeared to pocket the fluid, so that but a small quantity could escape. A tube was introduced to secure drainage. The patient took the ether badly, and in the midst of the operation his respiration ceased and he became cyanotic. Restorative measures were applied and he soon rallied, but did not fully recover from the shock. He gradually sank, and died at five o'clock on the following morning.

The autopsy revealed the presence of a large quantity of coagulated fibrin in the right pleural cavity; this fibrin was loculated, the spaces being filled with serous fluid. Throughout both lungs scattered miliary tubercles were found. There were no caseous foci or cavities. The other organs presented no signs of tubercular disease.

Case VII.—P. F., aged fifty-three, fishman, native of Ireland, admitted into St. Mary's Hospital, September 15, 1884.

For three months previous to his admission to the hospital he had complained of a slight cough and shortness of breath. The distress had gradually increased, with the addition of a copious muco-purulent expectoration, loss of appetite and flesh. At the time of admission his temperature was elevated, tongue coated, and bad colliquative sweats were of nightly recurrence. Physical exploration of the chest disclosed the presence of fluid in the right pleural cavity; the upper anterior portions of the lung were dull on percussion, and gave auscultatory evidence of partial consolidation. An attempt to withdraw the fluid was only partially successful; after the abstraction of about a half-pint the flow ceased, and severe pain was felt in the intercostal spaces and in the epigastric region. Several subsequent attempts were still less satisfactory, for we were only able to withdraw a few ounces, though the needle and tube were clear, the vacuum good, and the needle freely movable in the cavity. When the suction was strong the intercostal spaces could be seen to sink in. Had not the phthisical process already commenced in the upper lobe, I should have resected some of the ribs, but, under the circumstances, it was not thought advisable to operate.

On the 1st of January, 1885, the patient was discharged at his own request. On the 13th of May he was readmitted, his condition being much worse at this time. Physical examination revealed flatness on the right side down to the fifth rib, and bronchial breathing. On the left side there were dullness and bronchial vesicular breathing down to the cardiac area. The patient failed rapidly, and died on the 20th of May, just one week after re-admission. No autopsy.

In all of these cases it will be observed that persons previously healthy were attacked with the unilateral sero-fibrinous pleurisy, the existence of which was anatomically demonstrated. In none of them was any attempt made, at an early stage of the disease, to remove the fluid effusion and restore the expansion of the lung. They all deteriorated in health slowly, and in the first two tuberculosis undoubtedly developed but a short time prior to death. In Case VI, in which a post-mortem was made, the miliary granules were scattered, and there was no cheesy degeneration. In Case V there was scarcely enough in the way of physical signs to justify one, after the most careful examination, in predicating the existence of tubercle even at the apex of the diseased side, and the general condition of the patient, the entire absence of fever, and, finally, death from tubercular meningitis, would indicate that there had been no phthisical process going on in the lung up to a very recent period. In Case VII the slight auscultatory phenomena observed at the time of admission into the hospital were indicative only of an early stage of phthisis.

5. Those cases of empyema the appearance of which antedates the occurrence of tuberculosis. This class is simply introduced to make the list complete, and will not be discussed in the present paper.

The list of cases which I have presented as illustrative of the particular forms of pleurisy to which I desire to call attention might have been much longer, but to make it so would have unnecessarily occupied the time of the Academy. It will be observed that in all there has been distinct anatomical demonstration of the existence of pleuritic effusion, with the exception of the one reported by Dr. Butler. But my knowledge of that gentleman's skill in diagnosis warrants me in unhesitatingly accepting the result of his examination.

From the evidence given, I feel justified in stating the following conclusions:

1. That sero-fibrinous pleurisies, apparently simple in origin and terminating in complete recovery so far as the local manifestations are concerned, may be followed, after the lapse of a few months, by the development of phthisis pulmonalis.

2. That, in all probability, the pleurisy in these cases acts as a predisposing cause of the tuberculosis.

3. That primary sero-fibrinous pleurisy may result in fibroid phthisis, with the subsequent occurrence of tuberculosis pulmonum.

4. That fluid effusions remaining in the chest for a long time may finally so interfere with the nutrition of the lungs or of the body at large as to render it liable to tubercular infection, either local or general.

5. The rational deduction from these facts is, that no case of pleurisy should be neglected; that after apparent recovery great care should be taken that the health of the patient is completely restored before he is lost sight of by the physician. In the words of Sir Andrew Clark, "When we have a patient with basic fibrinous pleurisy, let us hold him fast, restrict his freedom, and treat him carefully until every remnant of it is gone." When all signs of effusion have disappeared, care should still be taken that the health of the patient is entirely restored before he is permitted to resume his former occupation, and if that occupation is one which involves any hygienic irregularities, he should be advised to change it. Where there is a previous history of phthisis in the family, still greater pains should be taken. The patient should remain away from business a long time, change his climate and entire mode of life if necessary, and should not be lost sight of by the physician for at least a year, even if his health is apparently entirely restored. When the patient has arrived at middle life, when the costal cartilages begin to lose their elasticity, and the general mobility of the thorax is apt to be somewhat diminished, effusions should not be allowed to remain in the cavity of the chest for more than two or three weeks. If the fluid accumulates after aspiration, this should be frequently repeated, and at moderately short intervals. In the case of a lady about fifty years old, after five or six aspirations at intervals of from one to two weeks, I found that, in order to keep the lung expanded, and so secure a chance of its adhesion to the chest-wall, it was necessary to draw the fluid every second or third day. By doing this the desired object was finally accomplished, and the patient made a good recovery. In such subjects, not only are the chest-walls less mobile than in the young, but the presence of inflammatory exudation actually increases the immobility by hastening the process of calcification of the costal cartilages.*

It is probable that the lives of three of the subjects of this form of disease whose cases I have narrated might have been saved by early and repeated aspiration. If they are encountered at a late period of the disease, when it is impossible to secure re-expansion of the lung, I believe that the operation of resection of the ribs, which was practiced in Case V, is worthy of a trial. The post-mortem appearances in this case would indicate that, so far as the local disease was concerned, it was well calculated to accomplish the object for which it was performed.† When the fluid is reabsorbed, but there are still dullness and feeble respiratory murmur at the base, the patient should be kept for a long time on the use of the most efficient tonics and alteratives, with very liberal diet and plenty of out-door exercise. He should also be instructed in the practice of respiratory gymnastics. When the health is sufficiently good, it is well even to inaugurate such exercises as the use of Indian clubs and dumb-bells. Under judicious exercise of this kind, I have seen a very markedly contracted side expand till its dimensions were equal to those of its fellow, with great improvement in the general condition of the patient. In more delicate subjects, in whom it is frequently advisable to use some passive means for expanding the chest, the inhalation of compressed air, or the equivalent treatment by the pneumatic cabinet, will sometimes give brilliant results.

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* Wintrich, Virchow's "Handbuch d. spec. Path. u. Therap.," Bd. v, 9tes Abth., 2tes Hft., S. 247.

† For a full description of the operation, with the reasons for its performance, see a paper by the author in "New York Medical Journal," March 12, 1887.

DISSECTION OF THE LOWER ORDERS OF VERTEBRATES AS A REQUIREMENT IN MEDICAL STUDY,

WITH A COMPARISON OF SOME OF THE PARTS OF THE DOMESTIC CAT WITH CORRESPONDING PARTS IN MAN.

By L. H. LUCE, M. D.,
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The comparison of the organs and structures of animals with those of man is always interesting and instructive. Very few, however, who have studied human anatomy alone fully recognize how closely the structures and organs of animals approach those of man. The *grosser* appearances of the lower animals have indeed long been recognized as bearing a general resemblance; thus the spinal column, the eye, and most of the viscera are readily acknowledged, even by the non-professional, as correlative with corresponding parts in the organism of man. But it is not fully appreciated by the profession generally that the structures of the lower vertebrates may be made the basis of accurate anatomical investigation, or utilized as useful adjuncts in the study of human anatomy. Professor Huxley says: "There is so close a solidarity between ourselves and the animal world that our inaccessible inward parts may be supplemented by them. A sheep's heart, or lungs, or eye, must not be confounded with those of man, but, so far as the comprehension of the elementary facts of the physiology of circulation and of respiration and of vision goes, the one furnishes the needed anatomical data as well as the other."

There is such harmony of opinion among leading scientists and educators that vertebrate dissection is a useful auxiliary to the study of human anatomy that it is astonishing that it has not assumed practical form as a requirement in our medical schools, or as a preparatory study for admission.

Anatomy is justly recognized as the basis of medical study, and just so far as it is thoroughly learned by the student will be his after success as a surgeon or diagnostician. A medical student required to dissect some of the lower forms of animal life which compare anatomically and physiologically with those which he is preparing himself to investigate would obtain a familiarity with anatomical methods that would give him an immense advantage over the student who presented himself for admission without such knowledge. He would have acquired skill in the use of the scalpel and such knowledge of tissues and organs as to be able to distinguish them readily. He would have learned how to observe and what to observe. He would begin just where he now leaves off in the meager amount of dissection required for the medical degree. How many medical students have dissected the sympathetic nerve? How many know from personal observation how the common duct of the liver enters the duodenum, or the ducts of Santorini and Wirsung? How many have learned by actual dissection of the relations of the peritonæum to the abdominal organs? These and other parts are neglected principally from lack of skill and method in manipulation, which could have been acquired by the dissection of animal organs.

So impressed was Cleavanger with the importance of animal dissection that he said "no medical student should be allowed to dissect the human cadaver until he has familiarized himself with the anatomy of the cat," and Professor Wilder, author of "Anatomical Technology," based upon the domestic cat, has said: "Felitomy should be the stepping-stone to anthropotomy."

Possibly the subject can be enforced in no better way than by the general comparison of analogous structures in the domestic cat and man.

Brachial Plexus.—Taking the brachial plexus, we find many points of resemblance. *First,* in the manner of its formation; *second,* in the number and distribution of its branches. This may be shown by Figs. 1 and 2, and the following table:

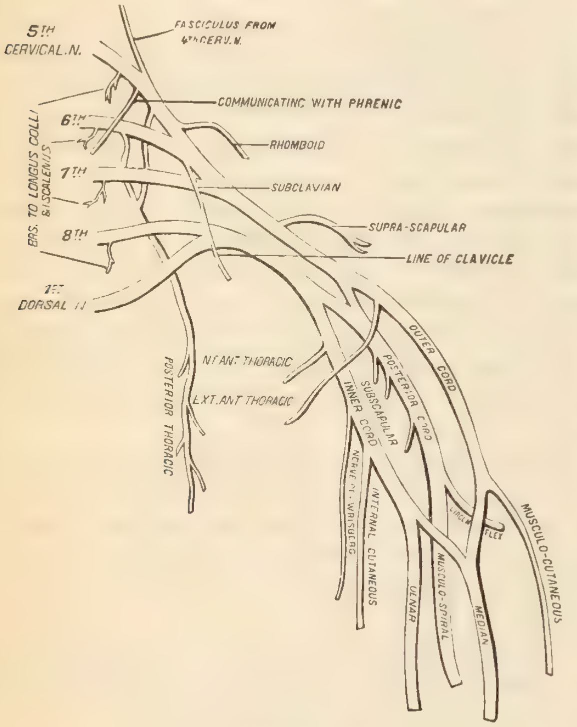


Fig. 1.—The brachial plexus of man.

Formed in man by the anterior branches of the fifth, sixth, seventh, and eighth cervical, and first dorsal; in the cat by the anterior branches of the sixth, seventh, and eighth cervical, and first dorsal.

It is well known that in man the distribution of the nerves in the formation of the plexus is in such a way as to form cords from which the branches arise; thus we have the outer, inner, and posterior cords. Although this anatomical arrangement does not occur in the cat, the branches arise in most instances from corresponding parts of the plexus. The form of the two plexuses, as might be expected, is quite unlike. In man it is broad in the neck, becoming narrower as it passes through the axilla, and again widening as it divides into its terminal branches. In the cat the plexus is nearly quadrilateral. It is in the number and distribution of its branches that the resemblance is close.

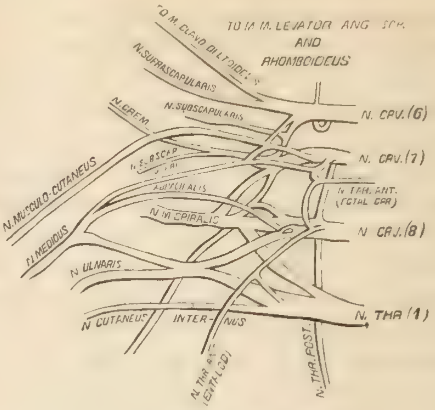


Fig. 2.--The brachial plexus of the cat.

The following table gives the branches of each:

Man.—Communicating, muscular, anterior thoracic, subscapular, musculo-cutaneous, suprascapular, internal cutaneous, lesser internal cutaneous, median, ulnar, musculo-spiral, posterior thoracic, circumflex.

Cat.—Suprascapular, subscapular, musculo-cutaneous, circumflex, thoracicus anterior, median, musculo-spiral, ulnar, internal cutaneous, nerves which pass to the clavo-deltoideus, the levator anguli scapulæ, and the rhomboideus, nervus latus, anterior thoracic, posterior thoracic, muscular.

To trace the origin and course of these nerves would be beyond the scope of this paper. They generally arise from corresponding portions of the plexus, and are distributed to analogous muscles. The musculo-spiral in the cat, like its homologue in man, is the largest nerve of the plexus. It follows the same course, winding obliquely around the humerus at about its middle, and is followed by the superior profunda artery.

The median nerve in the cat arises by three heads, instead of two as in man, but otherwise resembles its human homologue, as, in its middle course, the brachial artery passing between two of its divisions (cephalic and intermediate), and in its distribution to the structures of the forearm and hand.

A glance at the figures will show the remarkable length of the course of the posterior thoracic nerves. They arise from nearly the same portion of the plexus and pass to the serratus magnus muscle. The subscapular nerves are nearly identical. In both there are three subscapular nerves. They arise from the posterior aspect of the cord, and are distributed to the same muscles. The first is distributed to the subscapularis, and the remaining ones supply the teres and latissimus dorsi.

The circumflex in the cat resembles the circumflex in man by its circular course about the proximal end of the humerus and by its relation to the circumflex artery.

The spinal nerves of the cat present a striking resemblance. Each nerve-trunk arises by two roots—the posterior from the posterior and lateral aspect of the cord, the anterior from the antero-lateral aspect. They unite in the intervertebral foramen, and the ganglion appears on the posterior root just as they unite. The pneumogastric, phrenic, spinal accessory, and glosso-pharyngeal form an equally interesting and reliable basis of study. Turning to the abdominal viscera, the student will find a remarkable analogy. He may demonstrate with sufficient precision to make their after demonstration in man almost a repetition the pyloric valve, the entrance of the ducts of the liver and pancreas into the duodenum, and the foramen of Winslow, trace the portal and mesenteric veins, and make out the relations of the peritonæum to the abdominal organs.

Perhaps the articulations of the cat furnish the most accurate correlation to corresponding parts in man. They are also a comparatively unexplored field in comparative anatomy.

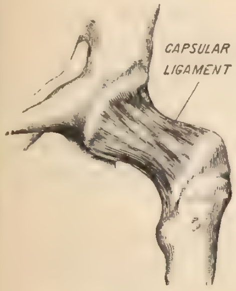


Fig. 3.

Hip Joint.—In the cat, as in man, the hip is an enarthrodial or ball-and-socket joint, formed by the joining of the head of the femur with the cotyloid cavity. The head of the femur in the cat is covered with cartilage, which, as in the human subject, is thicker at the head of the femur than on the neck near the shaft.

The ligaments of this joint in man are: teres, ileo-femoral, capsular, cotyloid, transverse. In the cat, capsular, cotyloid, teres, transverse.

Exposure.—The skin having been removed, carefully clear away the muscles, being careful not to injure the underlying capsular ligament, which may be recognized by its lighter color, and by moving the femur outward and inward so as to make the ligament tense. As the ligament is approached, it is best to clip off the overlying tissues with the scissors and by scraping with the scalpel so as to fully expose the extent of its insertion. It will be found, like its homologue in man, a strong, dense capsule, completely surrounding the neck of the femur; being attached above and in front to the base of the great trochanter and to the intertrochanteric line, and beneath to near the middle of the neck. It not only resembles the same ligament in man in the similarity of its attachment to the femur and the margin of the cotyloid cavity, but in being thinner inferiorly than on its upper and anterior part, and by its connection with the transverse ligament and the extension of its fibers to the obturator foramen.

Ligamentum Teres.—After examining the capsular ligament, draw a sharp scalpel around its attachment to the margin of the cotyloid cavity. Draw the femur steadily downward and rotate the head of the bone outward sharply, when the ligamentum teres will appear as shown in Fig. 4. It appears as a reddish, triangular band of fibers, attached to the depression near the head of the femur. They pass to the bottom of the cotyloid cavity, dividing a few lines from the head of the femur into two bundles of fibers. The *inferior* bundle is attached to the margin of the notch which crosses the bottom of the cotyloid cavity. It is also blended with the transverse ligament. The superior bundle of fibers is attached to the upper half of the cotyloid cavity in advance of the notch, thus differing from man, in whom *both* bundles of fibers are attached to the margins of the notch, according to Gray and Wilson.

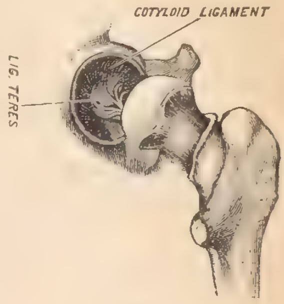


Fig. 4.

The *cotyloid ligament* resembles the same ligament in man in being a simple ring of fibrous tissue which surrounds the acetabulum. In the cat it appears as a simple reddish line surrounding the acetabulum, thicker on its upper and posterior portion than on the anterior and inferior. It is continuous with the transverse ligament. In both respects it is precisely like the same ligament in man.

The transverse ligament in the cat is a simple bundle of fibers, which fibrous tissue passes across the notch where the margin of the cavity is deficient. It fills the cavity rather than converts it into a foramen, as is the case in the human subject.

Knee Joint—Exposure.—Remove carefully and thoroughly the muscles near the joint, observing the same precautions as the joint is approached as in the exposure of the hip joint. This joint in the cat is formed, like the knee joint in man, by the condyles of the femur above, the tuberosities of the tibia below, and the patella in front. These bones are connected by nearly the same ligaments, some placed on the exterior, while others are found occupying the interior.

Ligaments in Man.—Anterior, or ligamentum patellæ, posterior, internal lateral, two external lateral, transverse, synovial, anterior crucial, posterior crucial, two semilunar fibro-cartilages, coronary, ligamentum mucosum, ligamenta alaria.

All of these ligaments can be plainly made out in the cat with the exception of the long external lateral, coronary, semilunar fibro-cartilages, and transverse.

Synovial Membrane.—The synovial membrane comes first into view after the muscles are removed. It is a broad, whitish membrane spread out over the anterior and posterior surfaces of the joint, covering the condyles of the femur, head of the tibia and fibula, under surface of the patella, and sending processes inwardly.

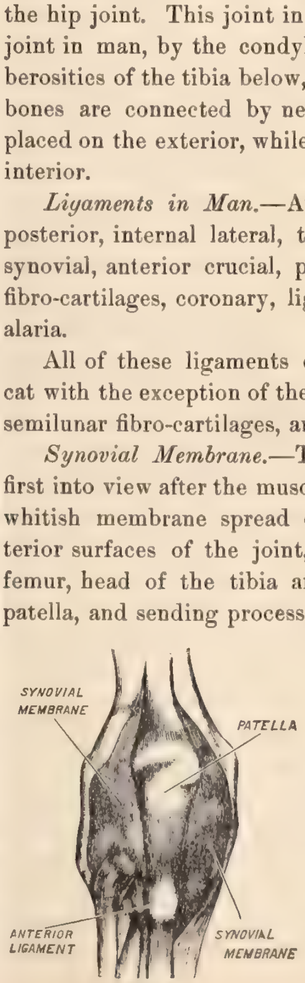


Fig. 5.

We find the anterior ligament in the cat, as in man, a prolongation of the rectus femoris, and trace it from the lower border of the patella to the tuberosity of the tibia. The external lateral and internal lateral have similar attachments as in man. The external lateral is attached above to the lower part of the outer condyle above, and to the upper and outer portion of the fibula below. A single cartilage is found between the external condyle of the femur and the outer tuberosity of the tibia. It is generally triangular in form. It is confined to the joint by attachments of the synovial membrane and by a short, narrow ligament attached to the apex of the patella and the tissues about its base. This is probably the homologue of the transverse ligament in man.

The internal lateral resembles its human homologue in being placed nearer the back than the side of the joint. It is attached above to the inner and back part of the internal condyle above and to the inner aspect of the inner tuberosity of the tibia.

The *ligamentum posticum Winslowii*, or posterior ligament, is found as a broad expansion of fibers which covers the popliteal space. It is attached above, like the same ligament in man, to the condyles of the femur, principally to the external condyle; below it is connected with the back part of the head of the tibia.

Ligaments within the Joint.—The ligaments within the joint are the ligamentum mucosum, two alar, and the anterior and posterior crucial. These are readily made out in the cat, and are essentially the same as the corresponding ligaments in man. To bring these into view, the synovial membrane and lateral ligaments must be divided and the leg drawn down from the femur, when the two alar ligaments will come into view as two whitish, somewhat fringed cords, which are attached as follows: The inner passes from the synovial membrane, of which it is a part, at the base of the patella to the fossa intercondyloidea, while the outer is continuous with the synovial membrane on the outer aspect of the joint.

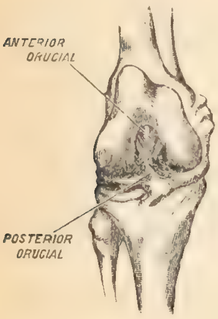


Fig. 6.

Anterior and Posterior Crucial.—These ligaments are brought more fully to view by dividing the two alar ligaments, when they will appear as represented in Fig. 6. They are precisely like the same ligaments in man, crossing each other in the same manner, from which fact they have received the name "crucial." The *anterior* is attached to the depression in front of the spine of the tibia, and passes obliquely upward to the back part of the external condyle. The *posterior* is attached behind the spine of the tibia and to the outer and anterior part of the internal condyle. The ligamentum mucosum is a conical fold of synovial membrane extending inward, between the bones, and connected with the ligamenta alaria.

It is not alone in the resemblances that the student will find assistance in his study of human anatomy, but the differences themselves serve to fix the subject more surely, as well as to widen the limit of observation. Finally, it is not too much to say that a student in his first year of study, who dissected the cat with such a text-book as Strauss-Durckheim, or, better yet, Wilder and Gage's "Anatomical Technology" in connection with his human anatomy, would acquire a greater knowledge of anatomical methods and detail than he now possesses at the expiration of his first or second term, when he receives his certificate as having passed in anatomy.

OZONE-OXYGEN.

A HISTORY AND A SUGGESTION.

By SAMUEL S. WALLIAN, A. M., M. D.

It is now nearly three quarters of a century since English physicians of repute and skilled in their art, stimulated by the reports of chemists as to the physiologic significance of many gaseous elements, conceived the idea of using various gases by inhalation in the treatment of some diseased conditions. These crude pioneer efforts and experiments were seconded by leading scientists of the day, including James Watt and Sir Humphry Davy. Among the gases and gaseous compounds thus tentatively investigated were oxygen, hydrogen, carbon dioxide, and other carbon-oxygen compounds, hydrocarbons, nitrogen, and various other gases and vapors. Of all these, none were finally esteemed as having therapeutic value except oxygen, nitrogen monoxide or "laughing gas," carbon dioxide, and, theoretically, peroxide of hydrogen, which is available only through the readiness with which it parts with one equivalent of its oxygen. This latter compound had but recently been described by Thenard, its preparation being difficult and expensive and its properties but little understood.

Having demonstrated that oxygen effectually antagonized the asphyxiating tendency of "choke-damp," it was assumed that it was contra-indicated in all acute and inflammatory conditions; and, on the other hand, it was hoped that its direct antagonist, carbonic acid, would subdue inflammation on the same principle that it quenches fire, and would thus prove a rational and reliable remedy in sthenic fevers and all hyperæmic conditions. It did not take long to demonstrate the futility of this assumption.

With oxygen, variously exhibited, some fairly wonderful results were announced—too wonderful, indeed, to be credited except by those who were the immediate witnesses of the trials. The reports savored of the miraculous, and were so far in advance of what the rank and file of the profession then considered possible as to arouse almost universal distrust as to their genuineness. From incredulity to intolerance in medical matters is but a step; hence, notwithstanding the eminent names associated with these earlier experiments, including, in addition to those already mentioned, such as Menzies, Cavendish, Coleman, Cavallo, and others of equal prominence, and notwithstanding the fact that both the accuracy of the experiments and the genuineness of the results were vouched for by witnesses whose testimony was acknowledged to be unimpeachable, these pioneer experimenters were accounted innovators, and treated to the usual reception accorded to such. Ridicule deepened into downright persecution, and those who were directly associated with the practical details of the new treatment were compelled to desist from their novel practice under pain of professional ostracism, if not of actual prosecution.

At the outset of this study of what was termed pneumatic therapeutics it was naturally presumed that the use of the gases would be chiefly or wholly limited to diseases of the respiratory tract. Unfortunately, this impression largely still prevails, although a little reflection would suggest that the direct effects should be looked for in the circulating fluid rather than in the mere organs of respiration. And this fact soon impressed itself upon Dr. Beddoes, whose name, second only to that of Priestley, heads the list of early experimenters. He was professor of chemistry at Oxford, and in his day was esteemed well up in general medicine. He soon satisfied himself that none of the gases tried possessed any positive or available therapeutic value except oxygen and its immediate congeners. This element was then known by the rational name of "vital air," a name far more expressive of its properties than the one now used, and was found to be applicable to a wide range of diseased conditions. As a natural consequence, Beddoes became over-enthusiastic and indulged in visions of a new era about to dawn in the medical world. But he was doomed to the disappointment which sooner or later comes to most enthusiasts. Considering the crude state of chemical science at the time and the bigoted opposition of croaking conservatives—a race which has not yet become extinct—it is not to be wondered at that Beddoes at last desisted in sheer desperation, although protesting and insisting to the last that "vital air" would prove one of our most natural, powerful, and reliable therapeutic allies, and that it would ultimately be made available.

Following Beddoes, Daniel Hill, of Great Russell Street, Bloomsbury, a general practitioner of considerable eminence, gave some years of patient and thorough study to the subject, used oxygen extensively in his practice, reported some almost incredible recoveries from its use, and published a very candid and instructive brochure, recounting his experiences and summing up his conclusions. He treated *asthma*, *cardiac weakness*, *hydrocephalus*, *epilepsy*, *paralysis*, *knee-joint disease*, *hip-joint disease*, *arrested development*, *spinal diseases and deformities*, *caries*, *lupus*, *malignant tumors*, *intractable skin affections*, *neuralgia*, *hysteria*, and various forms of *diseases of women*.

His little book was full of suggestive material, and merited a better reception and recognition at the hands of the profession than were accorded to it.

His conclusions were educed from the scientific experiments of Priestley, Lavoisier, Cavendish, Menzies, Watt, Davy, and others, and from the promising clinical results reported by his predecessor and virtual preceptor, Beddoes; and his practice, although strictly tentative, can not be said to have been wholly empirical. In abstracting some salient points from Mr. Hi[illegible]here is little risk of reproducing anything already familiar to, perhaps, a single reader of this Journal.

His first trials of "vital air," based on theories advanced by Dr. Beddoes, were made in cases of *asthma*, and were followed by considerable success. As a result of his experience he was led to assert that, "in all cases of debility where the action of the heart and arteries was weak, oxygen should prove extremely beneficial to the patient."

Himself a sufferer from this form of weakness, he made a careful personal trial of the remedy, and thus states results:

"After having inhaled vital air by measure for several weeks . . . I had the satisfaction to find myself in a state of health and strength which I had not experienced for the last seven years, owing to a gouty constitution, accompanied with nervous irritation, for which the use of medicine, under the direction of the late learned Dr. Warren and others of the faculty, had not afforded me the least relief.

"This speedy renovation of constitutional vigor was marked by an unusual redness of the skin, more especially of the face and both extremities, which occasioned my having no doubt in my own mind that this very active remedy might be successfully applied in many bad surgical cases, as ulcers, gangrenes, etc., since one great object in surgical practice is to excite a due action in the languid vessels of old and indolent ulcers, so as to promote a granulating and healing process.

"The first trial I made, in order to confirm this opinion, was in the case of a Mrs. Munt, an elderly woman, of Fore Street, Cripplegate, who, after having suffered eighteen years from an extremely irritable and obstinate ulcer in her leg, was perfectly cured in three weeks by following the same alterative plan of inhaling vital air, with the occasional use of other indicated remedies.

"The second was a more desperate case, that of Rev. J. C. Atwood, in whose left leg a large gangrenous ulcer had existed for above a year and a half; and, although he had been under the care of two eminent surgeons, so little success attended their endeavors that amputation seemed inevitable, and was nearly decided upon when he came to see me.

"This case was also cured in six weeks.

"Having been so far successful, I was led to conclude that as vital air had produced such good effects in the soft and fleshy parts of the body, it would likewise on the more solid and bony parts; for, the living principle being thus imbibed by the blood from the lungs in breathing, thence conveyed to the heart, and, from the known laws of the circulation, transmitted by the heart through the arteries by an infinite number of branches and ramifications, it must not only penetrate the soft parts, of which I had sufficient proof by these facts, but all the different organs and various bones of the body. Hence I further hoped it might give sufficient energy, when judiciously administered, to cure white swellings and diseases of the bones, and more especially assist in the process of growing, and cases of deformity. This conjecture is happily confirmed by numerous experiments."

At this day it seems strange that a treatment so unquestionably rational and so practically promising should have been remanded to half a century of neglect. Hill's little volume bore the imprint of 1820. To-day perhaps not half a dozen copies—possibly not a single complete copy—can be found.

Since the days of Beddoes and Hill, oxygen has been much studied, both as an element and in its countless combinations, more especially as to its chemical, and incidentally as to its physiological, relations; but, until quite recently, comparatively little has been done toward developing and determining its therapeutic value. Abroad there has never been a cessation of effort to further this inquiry, but, for a wonder, American enterprise has virtually ignored the significance of the earlier experiments, and has permitted foreign scientists to precede and distance it in a study which is full of practical interest and by no means abstruse.

To illustrate the contrast between recognized authorities in the two hemispheres, compare the standard works on materia medica of the two sections. Our own Stillé disclaims any personal knowledge of the subject, but proceeds to quote other authorities to the effect that no greater than the unvarying proportion of oxygen found in the normal atmosphere can be absorbed into or utilized by the blood. To the casual or unthinking reader this would seem to dispose of the whole question, whereas it has very little bearing, and really proves nothing. It would be quite as satisfactory, scientific, and final, to say that the quantity of nourishment afforded by ordinary articles of diet can not be increased!

On the other hand, the English Phillips, in his very able and comprehensive work, devotes considerable space to the subject, citing copiously from eminent authorities to the effect that the therapeutic applications and possibilities of artificial or factitious oxygen are both comprehensive and unquestionable.

To negative Dr. Stillé's easy-going dismissal of the subject, we have only to recapitulate a few of the many established facts of physiology:

> All vital activity arises from the action of oxygen and the elements of food. The first conditions of animal life are nutritious matters and oxygen introduced into the system. . . . Man takes from the atmosphere in one year, according to Menzies, 837 pounds of oxygen (or about 1,000 gallons per week). The amount of nourishment required must be in direct ratio to the quantity of oxygen taken into the system. Oxygen consumes without exception all such substances as are capable of entering into combination with it (including uric acid, urate of soda, and carbonaceous matters, which are the causes of rheumatism, gout, catarrh, etc.). From the first moment that the function of the lungs or skin is interrupted or disturbed, compounds rich in carbon appear in the urine, which acquires a brown color Over the whole surface of the body oxygen is absorbed. The chemical action, which the elements of food and oxygen exercise for each other, is the only ultimate cause of vital force. The globules of blood serve to transport oxygen through the capillary vessels. Here the oxygen combines with the carbon to form carbonic acid, and with the hydrogen to form water. We know that the animal system absorbs oxygen from the atmosphere, and that this oxygen is again given out in combinations with carbon or hydrogen, and that a process of oxidation is the only source of animal heat. But the oxygen is not given out in a free state, because it meets in the organism with substances possessing the property of entering into combination with it. Oxygen in the arterial blood and moisture (water) present the chief conditions of all transformations in the body. In the action of the gastric juice on the food, no other element takes a share, except oxygen and water. The results here described have surprised me. They are not the creation of fancy, and the method which has led to them is the only one by which we can hope to acquire insight into the nature of the organic processes. The organs are formed from the blood. . . . They become transformed with the addition only of oxygen and water. The disappearance of uric acid . . . plainly stands in a very close relation to the amount of oxygen absorbed. . . . When uric acid is subjected to the action of oxygen, it is first resolved into alloxan and urea. Uric acid disappears in the urine of man when he receives through the skin and lungs a quantity of oxygen sufficient. . . . If to one atom of uric acid we add six atoms of oxygen and four atoms of water, it resolves itself into urea and carbonic acid.—*Liebig.*

The blood has great affinity for oxygen, absorbing two and a half times as much of it as water at the same temperature (Magnus). If freshly drawn venous blood is shaken in a bottle with pure oxygen, its color *at once* changes from purple to red, and the same change will take place, though more slowly, if the blood is agitated with atmospheric air (Dalton). Twenty-five per cent. of the inspired oxygen disappears in the body of omnivorous animals, as, for instance, dogs, while fed on animal food only; but when fed on starchy food, *all but eight per cent. reappeared in the expired carbonic acid* (Regnault, Rieset).

Hence, as regards the theory of respiration, the fact is as important as it is remarkable that in the same animal *the proportion of oxygen absorbed to that of carbon dioxide or carbonic acid exhaled varies according to the quality of the food.*

Again, the proportion of oxygen which disappears in the interior of the body, over and above that which is returned with the breath, under the form of carbonic acid, varies in different kinds of animals. In the herbivora it is about ten per cent. of the whole amount of oxygen inspired; in the carnivora, twenty or twenty-five per cent. (Dalton).

Scientists have established the fact that the actual or theoretical proportion of oxygen in the atmosphere is everywhere and at all times the same, in the lowest valleys and on the highest mountains; but we well know that the practical and available proportion of the vital element found in the atmosphere of living-rooms, crowded tenements, factories, school-rooms, and public halls, is extremely variable. None but those who inhabit climates suited to such practice, and who dwell constantly in the open air, can be said to have access to a normal supply of oxygen. The natural reaction from famine is feast, and there is no reason why this law should not hold good in the domain of physiology. Your starved horse, or other domestic animal, is plied with extra rations; the emaciated war-prisoner or repentant and hungry prodigal is feasted on the best the land affords, even to the sacrifice of the favorite fatted calf. By a similar law it is entirely rational to guardedly supply an excess of oxygen to those who have necessarily been cheated of their due and normal allowance.

The immense importance of the vital element of the air we breathe is universally acknowledged, though in a passive and unthinking sort of way. The annual exodus of invalids to Europe, to the mountains, and to the seaside, are spasmodic gasps for more oxygen. The sea voyage affords a faint flavor of ozone, and ozone is oxygen. Yet very few, even well-educated people, in truth, not even a majority of physicians, adequately realize its dominant agency over every phase of animal life. For example, the human adult requires for his daily sustenance about *two pounds* of solid food; while of atmospheric air—aeriform or pneumatic food—he consumes, and peremptorily requires, *thirty to fifty pounds* in the same time.

There is another point to which little or no attention has been paid, although the practical fact on which it is based is well known and universally admitted. It is this: that *nascent or factitious oxygen is, physiologically and therapeutically, quite as distinct from the ordinary oxygen of the at-*

mosphere as though it were in reality quite another element. Hence all comparisons between the two, and inferences based on a non-recognition of this fact, are both irrational and delusive. There is always present in the former that over-active allotropic condition which chemists have named *ozone*, and for which some of them hesitatingly suggest the symbol or formula O_2O, others writing it O_3. This almost mysterious substance or state is always present in sea-air, in the atmosphere of mountain countries, and everywhere after sudden storms accompanied by lightning or other electrical phenomena.

It is evident that even as to the chemical, and certainly as to the physiological and therapeutic, relations of this universal and essential element we have much to learn. This much we have determined, that ozone or ozonized oxygen is condensed or contracted in volume in proportion, according to Soret, of 3 to 2. It is therefore *intense* oxygen, or *oxygen at high tension ;* and in this respect it may be compared with that other mysterious force, with which so many conceitedly bungle and which so few yet half understand—electricity. In case of the latter, we have learned a few letters of its alphabet, and now prate timidly of *volts*, *ohms*, and *ampères ;* of currents of high and low tension, primary, secondary, and constant; of great intensity and little volume, and *vice versa.* Similar characteristics and peculiarities must be recognized in relation to ozone and oxygen.

First of all, misapprehensions are to be corrected, since it frequently takes longer to unlearn wrong conceptions than to inculcate correct ones. For example, it is almost universally taught and believed that ozone is invariably violent and dangerous in its effects on the animal economy. On the contrary, Professor Binz, of Bonn, has shown that pure ozone, suitably diluted, can be inhaled with perfect impunity, and without producing any of the irritant effects on the air-passages usually ascribed to it. Instead of irritating, if its inhalation is kept up for some time, it induces a calm and pleasurable but transient sleep, not unlike the anæsthesia following the inhalation of nitrogen monoxide.

It is therefore impossible to escape the conclusion that *the therapeutic efficiency of oxygen is largely due to this indefinable state*, called—for the present and for want of a more accurate term—*ozone.*

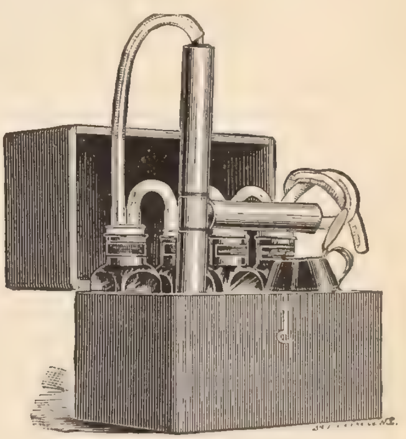
This is a feature of the subject which, as yet barely suggested, will surely repay much further and more searching investigation at the hands of advanced scientists.

Another of the stereotyped stupidities constantly reiterated in text-books of chemistry, as well as in works on physiology, materia medica, and therapeutics, is that pure oxygen, inhaled, acts as a powerful and direct physiological *stimulant*, using this word in its usual rather than in its actual signification. This impression—for it has never amounted to a demonstration—belongs with scores of other therapeutic delusions. For example, that mercury is a reliable antiplastic and "antiphlogistic," whatever that term may once have meant; that quinine is a general tonic; and that overwhelming a given symptom is a rational method of "curing" a given disease. If the word stimulant be used in its higher signification, that of *tonic*, there is less objection to it.

The feeling experienced after inhaling a reasonable quantity of pure oxygen, and more distinctly after using a mixture of oxygen, nitrogen monoxide, and common air, in suitable proportions, is one of restfulness rather than of stimulation. The rapid pulse is slowed, the irritable one steadied, and *arterial tension lessened.* These are surely not the sequelæ of stimulation.

A word as to practical results. The conditions in which, in my hands, oxygen, variously modified and administered with judgment and reasonable persistency, has given the most thoroughly satisfactory results, are uncomplicated *asthma* and the *chronic indigestions*, for the various manifestations of which the names are legion. If any given remedy, or line of treatment, will gradually but surely correct a morbid or vicious assimilative function, and arouse to normal vigor a weak and disordered digestion, it follows that there is, practically, no constitutional condition which it will not favorably influence, since digestion and assimilation are the foundation of all sound physiology, as indigestion and malassimilation are at the bottom of most pathological conditions, not excepting those fatal scourges of the human race, diabetes, rheumatism, tuberculosis, and carcinoma.

And whether we accept or reject the bacillary theory of the origin and propagation of phthisis, in ozone-oxygen and its congeners—when we shall have learned to properly combine and exhibit them—we have certainly its most direct and rational antagonist, if not its physiological antidote; since, causes or concomitants, whichever they shall eventually prove to be, the lower organisms can not long survive and reproduce their kind in fluids freely supplied with nascent oxygen. Thus exposed, they rapidly degenerate, lose their virulence, and become inert, or are absolutely destroyed. And, since it has shown such universal activity as a germicide, whether we accept or deny the germ theory of any disease, we may find in ozone-oxygen, or oxygen at high tension, one of our most reliable weapons of offense and defense; while happily its use is devoid of all dangerous tendencies, a fact which can not be asserted of any other really potent antiseptic.



The cut shows a convenient and easily portable form of apparatus, recently perfected, for promptly evolving nascent or fresh gas at the bedside.

152 East Eighty-sixth Street.

THE DANGERS OF INTESTINAL PUNCTURE IN THE TREATMENT OF TYMPANITES.[*]

By B. FARQUHAR CURTIS, M. D.,
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EVERY little while there appears a new advocate for the use of puncture of the bowel as a means of relieving tympanites in peritonitis, intestinal obstruction, and kindred conditions. There can be no question that the method has been employed very often with good results and without any signs of subsequent fæcal extravasation, but there can also be no doubt that there is very great danger of such an accident and of fatal consequences therefrom. Evidence upon this point is not scanty.

In a case in which enterostomy was performed for intestinal obstruction by Müller ("Arch. f. klin. Chir.," xxiv, 178), while the gut was being secured to the edges of the wound in the abdominal wall, before it was incised, a fine stream of fluid fæces was observed to issue from the intestine every time the needle penetrated the wall of the gut, although the needle and thread employed were very fine. In this case the tympanites is said to have reached an unusually extreme degree, and one of the safeguards of puncture with a hollow needle was of course wanting, for, when the latter instrument is used, the tension of the gut is at once relieved by the escape of gas and fæces, and the collapse of the bowel facilitates the closure of the wound made by the needle. But the case is an instructive illustration of what minute wounds will permit fæcal extravasation.

Among the cases of laparotomy for the relief of intestinal obstruction there are numerous instances in which punctures have been made in the bowel with fine aspirating needles during the operation, in order to lessen the amount of distension and assist the return of the intestine to the abdominal cavity. In some of these cases it has been observed by the operator that the openings did not close, and that gas and fæcal matter escaped from the openings after withdrawal of the needle. Thus I have found cases in which this phenomenon was observed by Hulke,[†] Howse,[‡] Fincham and Cowell,[#] Halsted,[‖] Gerster,[△] Atherton,[◊] and Obalinski.[‡] In the case of Fincham and Cowell the oozing of fæces was arrested by the pressure of a sponge wet with a 1-to-20 solution of carbolic acid. But it has generally been customary to occlude the wound made by the needle with a couple of Lembert sutures—in fact, these punctures are considered by surgeons to be so hazardous that it has been the rule to apply the sutures even when no oozing was perceptible.

It has also been observed that these punctures remain open—at least for some time. In the recent discussion upon intestinal obstruction at Albany, Dr. Jacobi stated that some twenty years ago he presented post-mortem specimens to the New York Pathological Society which showed that the punctures remained open and discharged fæces into the abdominal cavity. Unfortunately, I have been unable to find the published account of this case. Bryant has observed the same condition in two cases, and Silver in one case ("Brit. Med. Jour.," 1878, i, p. 124). In 1869 a case was reported at the London Clinical Society ("Transactions," vol. ii, p. 64) in which a boy was struck in the left groin by a cricket-ball, and peritonitis developed, with great tympanites. On the seventh day after the accident a puncture was made with a fine needle, and the tympanites was relieved. The boy died from the peritonitis twenty-eight hours later, and the autopsy showed that the latter had been caused by a rupture of the ileum, but that the opening made by the needle in the wall of the gut was patent, and had allowed some fæcal extravasation to take place.

There is probably less danger of fæcal extravasation when the intestine is not distended when wounded, as might occur in searching for pus in cases of abdominal abscess, than when it has been extremely distended for a long time, as in intestinal obstruction or peritonitis, for in the latter case the contraction of the wound in the gut must be very slow on account of the paralysis of the muscular coats caused by the overdistension. In peritonitis, the effused lymph upon the outside of the bowel would stiffen its wall and prevent the contraction of the wound; but, on the other hand, it would remove all danger if there were adhesion of the intestine to the inner surface of the abdominal wall, and even if this were not the case at the point of puncture, the neighboring adhesions would limit any fæcal effusion which might occur. Thus the danger would be greatest in extreme and long-continued distension of the gut without peritonitis.

These facts are not presented with the idea that they afford sufficient ground for the absolute condemnation of this method of treatment, but as a warning that there exists a real danger of fæcal extravasation after its employment, and as an argument for the restriction of its use to those cases of extreme tympanites in which it is evident that the patient will succumb to the pressure of the gas in the intestines upon the diaphragm unless immediate relief is given. A very striking case of this kind, which I witnessed, and reported in the "Annals of Surgery," January, 1887, p. 24, by the kind permission of the gentlemen in charge, was in a patient upon whom Dr. Thomas performed laparotomy for a fibro-cyst of the uterus, and who had been left in the charge of Dr. J. B. Hunter. A drainage-tube had been inserted into the cyst, the latter was irrigated every day, and everything went well until the tenth day, when the patient was frightened and made a sudden movement in bed. A low grade of peritonitis followed, and excessive tympanites developed. On the twelfth day the patient was cyanotic and evidently about to die, making only four respirations a minute, and as a last resort Dr. Hunter introduced a fine aspirating needle into the abdomen. A very large quantity of odorless gas escaped, the abdomen became perfectly flat and the patient rallied at once and made a slow but steady recovery. The large quantity of gas escaping from a single puncture, and its freedom from any odor, make it probable that it was contained in the general peritoneal cavity and not in the intestine, but, unfortunately, no examination was made at the time of the area of dullness on percussion over the liver, so that the evidence is incomplete.

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[*] Read before the New York Clinical Society, February 24, 1888.

[†] "Med. Times and Gaz.," 1872, ii, p. 463.

[‡] "British Med. Jour.," 1876, i, 365.

[#] "Medical Times and Gazette," 1876, ii, 651.

[‖] "Medical News," Philadelphia, 1883, xlii, 113.

[△] *Ibid.*, 115.

[◊] "Boston Med. and Surg. Jour.," 1883, cviii, 553.

[‡] "Wiener med. Presse," 1885, p. 203.

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CASCARA SAGRADA IN RHEUMATISM.

By H. T. GOODWIN, M. D.,
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In addition to the many things already said relative to the buckthorn family, I beg to invite the attention of the profession to two important facts in regard to the therapeutics of the *Rhamnus purshiana* (*Cascara sagrada*) that, so far as I know, have not before been noticed. One is its uselessness as a laxative in the majority of cases of phthisis; the second, its almost specific action in certain forms of rheumatism.

My attention was first directed to its failure as a laxative in phthisical patients by the steward of the New Orleans Marine Hospital, an observing man, who informed me that he had noticed that, though it had been administered by nearly every surgeon with whom he had served at the various hospitals to such patients requiring a laxative, it had failed in every instance.

Desiring to confirm or disprove his observations, I commenced its administration to every phthisical patient in the wards, and to each one was given 1·5 c. c. of the fluid extract t. i. d. This quantity having no effect, I gradually increased it to 4 c. c., at the same hours, and in no single instance was its usual action obtained. I have since used it repeatedly with like effect.

Its effect on rheumatism I discovered by accident. About three months ago I was attacked with severe rheumatic pains in my shoulder, the slightest motion causing intense pain. The third day of the attack I commenced taking as a laxative ten drops of the cascara t. i. d. The first morning after taking it the pains were so much less severe that I could move my arm freely. The day following I was entirely free of all discomfort.

Although, as I have intimated, I had not taken the cascara with any idea of relieving the rheumatism, it occurred to me a few days later that possibly the sudden subsidence of pain might have been due to the drug. There being a few cases of rheumatism in the wards, I determined to try to verify my suspicions. Discontinuing the salicylates, iodides, etc., which these patients were taking, I substituted ext. cascaræ sagradæ fl., 1 c. c., t. i. d. The result astonished me. Within twenty-four hours there was marked improvement in every case. One case especially is worthy of notice. The patient was a Swedish sailor who had been admitted three months previously. He suffered intensely, and, although almost everything had been given from which relief might be expected, his suffering was not allayed. For a day or two after admission he improved on large doses of salicylate of sodium, but subsequently the pains returned as badly as ever, and the salicylate had no further beneficial effect. Iodide of potassium was given several different times, but, owing to an idiosyncrasy, could be continued only two days at a time, a profuse rash making its appearance over the patient's entire body, the pains remaining as acute as ever. They were not confined to any two or three joints, but felt in all, being more severe, however, in the wrists, finger joints, and ankles, all of which sometimes became œdematous. On the evening of February 5th I commenced the exhibition of fifteen-drop doses of *Cascara sagrada* three times daily. The following morning he was about the same; the second day he was much better; on the seventh he was so far recovered that he asked and obtained permission to walk out. From this on he continued to improve steadily, and on the 17th of February was discharged recovered.

I have since used the cascara in fully thirty cases, some ten of which were in out-patients, and, with the exception of three or four in which there was a syphilitic taint, I have obtained the most satisfactory results. I commenced with 1 c. c., t. i. d., and have so far never had to increase it beyond 1·5 c. c., and even to this extent in but two cases. I have seldom had to wait beyond twenty-four hours for beneficial effects. In two cases I had to stop it temporarily owing to its opening the bowels too freely. In such cases I would suggest that one of the preparations of iron be given (separately) at the same time. I usually combine it with syrup or glycerin in equal parts, and instruct the patient to take from thirty to forty drops in water. In one case in which neither it nor the salicylate of sodium appeared to give much benefit I combined the two with good effect. It is but seldom the bowels are opened too freely by it, the cases above referred to being the only ones I have so far observed.

Among the out-patients upon whom I have used it were two intelligent officers of vessels.

One was an old river pilot who had periodically suffered intensely for years. I gave him equal parts of the cascara and syrup, of which I instructed him to take 2 c. c., t. i. d., and requested him to see me again in three days. He returned a month later, and then only to get the medicine renewed. He reported that he had never before had anything relieve him so quickly. The pains began to abate within twenty-four hours after taking the first dose, and in three days after left him entirely. He had had no return, but, for fear of another attack, had come to ask for a bottle to keep with him.

The second case was that of Mr. R., first clerk on a large river steamer. He was suffering so much with pain in the hip joint and thigh that he could scarcely get to the office. I put him on large doses of salicylate of sodium, with colchicum and iodide of potassium, and instructed him to return in a day or two. In a week he sent a friend to say that the pain, instead of lessening, was so severe that he could not get to the office. The salicylate, etc., were stopped and he was given cascara and syrup, thirty-five drops, t. i. d. This was on Friday afternoon. On Sunday he came to the hospital and reported that he had commenced taking the second prescription Saturday morning, and that on Sunday he had felt decidedly better. He was ordered to continue the drops, and report on Wednesday. Tuesday he sent word that he should be unable to report, as he was sufficiently recovered to resume his usual place on the steamer.

I am not able to explain the action of the drug in relieving rheumatism; I leave that to other observers. I write this in the hope of inducing other medical men to use the cascara, report their experience, and indicate, more particularly, in what class of cases they have found it of most benefit.

NEW ORLEANS, LA., *May 9, 1888.*

LAPAROTOMY PRACTICALLY CONSIDERED,

WITH REPORT OF FIVE CASES.[*]

By RICHARD DOUGLAS, M. D.,
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Hæmato-salpinx; Laparotomy; Recovery.—Reported in full in the "American Journal of Obstetrics and Diseases of Women and Children," April, 1888.

Ovarian Abscess; Laparotomy; Recovery.—Priscilla P., aged twenty-five, married, has never been pregnant. For years she had suffered with painful menstruation, with scanty and protracted flow recurring about every three weeks. She gave a history of two attacks of severe pelvic inflammation, one in 1885, the second in November last. I was first called on February 1st. She had been confined to her bed for three weeks, her attending physician treating her for typhoid fever. I found her prostrated, with the pulse 120, the temperature 103° F.; she had that morning suffered with a severe rigor; the night before and for several nights previously she had suffered with colliquative sweats. There was constant, persistent, and most distressing vomiting. This, I would remark, is an important diagnostic symptom generally present in ovarian disease, in differentiation from tubal disease. Her abdomen was tympanitic in the left ovarian region; palpation revealed a firm tumor of about the size of a large orange; by vaginal examination the tumor was found to be closely adherent to the uterus and completely filling that side of the pelvis, retroverting and displacing the uterus to the extreme right. *Per vaginam* fluctuation could not be elicited, but by rectal examination it was very distinct. My diagnosis was pelvic abscess, most probably ovarian. The proper course to pursue would have been to perform an immediate operation, but I allowed myself to stand too much in awe of her extreme prostration, and attempted, by local and constitutional remedies, to alleviate her sufferings and improve her general condition. On February 8th, seven days after my first visit, there was no improvement in the patient, and I was satisfied of my diagnosis of pelvic abscess. I performed abdominal section. Upon opening the cavity the dark surface of the tumor was seen. Adhesions were strong and firm on all sides. With difficulty I succeeded in freeing the anterior surface of the tumor, carefully attempting to enucleate the mass, hoping to preserve the cyst from rupture; unfortunately, however, the walls were too thin, the sac was opened, and about half a pint of pus escaped into the peritoneal cavity, a complication for which I greatly censured myself. I should have drawn off the contents of the sac by aspiration, cleansing the cavity as quickly as possible. The diseased mass was brought up and tied off. Finding the right tube enlarged, the ovary large, soft, and pulpy, these appendages were likewise removed. There was no hæmorrhage from either pedicle, but, as a matter of precaution, each fresh surface was seared with the cautery. After a careful toilet of the peritonæum, Sims's drainage-tube was introduced; through this excellent channel the cavity was irrigated every six or twelve hours. Owing to the fact that pus had escaped into the peritoneal cavity, I feared the advent of septic inflammation, consequently did not think it prudent to remove the tube before the sixth day. There having been no temperature over 100° up to that day, I attempted removal of the tube, and found it fast, after considerable trouble, and I determined to wait a day longer; I then made repeated efforts by twisting and pulling to free it, but fast it was; truly speaking, it was in *morsus diaboli.* The tube was doing no harm as yet, but it was quite an unpleasant predicament for me. I waited twenty-four hours longer; on the evening of the eighth day after the operation there was tenderness with a temperature of 102°. I could wait no longer; with the patient chloroformed, I opened the wound at the lower angle, which had healed throughout, introduced my finger upon the tube as a guide, and found that a piece of tissue had prolapsed into the fenestra of the tube; this it was that was holding it so fast. Satisfying myself that this tissue was neither bowel nor bladder, but probably omental, I mashed it off by pressing with my finger-nail against the margin of the fenestra. This being done, the drainage-tube was removed without difficulty. Two deep and two superficial catgut sutures closed the wound. This second opening of the peritoneal cavity did not seem to retard the recovery in the least. On the fifteenth day after the primary operation the patient was sitting up; in three weeks she was sent home well.

The specimen removed from the woman showed but little Falloppian trouble. The ovary itself was as large as a small orange and showed two distinct pus cysts: one, as before stated, held about eight ounces; the other contained half an ounce of bland pus. Pyocystic disease of the ovary in its pathology is not identical with abscess, though no doubt the same symptoms are present in each. Associated with ovarian suppurations the tubes may be simply congested or filled with purulent contents; sooner or later rupture with its disastrous results must follow. We have no assurance that if pus is present it will ever be absorbed. Therefore, having diagnosticated the case as pelvic abscess, what is before us? One of two procedures. The vaginal incision is the chosen method of such distinguished men as Mundé, Byford, Schröder, and others. The objections raised against this operation are strong, and I am convinced that pelvic abscess, whatever be its origin, is best treated by laparotomy. Tait advocates the method. Professor Gill Wylie, one of our best American authorities, spends hours before his classes at the Polyclinic explaining the prolapse and folding over of the broad ligament and the technique of this special operation. Of course, in the minds of some men there yet remains the "inherited dread" of opening the peritoneal cavity. To those so impressed we can only say, Confine yourself to some other branch of medicine; leave laparotomy and the question of its propriety to others. Fear of censure is a horrid chasm into which the brilliant spark of many a professional career sinks into oblivion. Then, gentlemen, in treating pelvic abscess, be strong in the courage of your conviction. Bear in mind the Shakespearian admonition—

> "To thine own self be true;
> And it must follow, as the night the day,
> Thou canst not then be false to any man."

The third case I offer is one of entirely different nature. In this case laparotomy was done for the

Relief of Constant Pelvic Pains and Reflex Nervous Symptoms; Recovery.—Mrs. S. S., aged thirty-four, had been married fourteen years, was mother of one child twelve years old, and had never been pregnant since that labor. This was one of those cases filled with historic episodes characteristic of chronic inflammation in the tubes and the ovaries. For ten years she had suffered almost constant pelvic pains, menstrual derangement, and profuse and irritating leucorrhœa. Gradually the local symptoms had made their impressions upon the nervous system. For the relief of all these ailments, she had passed through many hands, was nervous, irritable, never free from pains, suffered from insomnia, headache, dyspepsia, etc. The act of intercourse was almost death to her. The uterus was enlarged, with lacerated and granular cervix, and retroverted; both ovaries were large and prolapsed, especially the left ovary. The most delicate touch of the left ovary would cause her to scream with pain. Surely if there was ever a case of nervous trouble due to disease of the tubes and ovaries, this was one. An operation was evidently called for, yet I resorted to every means of relief before making a sacrifice of these organs. For nearly four months I gave her the benefit of such treatment as I thought best. All local treatment aggravated her suffering. At last I saw the inevitable necessity of more radical measures. On February 22d I performed Tait's operation. It was with great difficulty the displaced ovaries were freed from their attachments. Both glands were enlarged, and the left was cystic and firmly adherent; the tubes were thickened and congested, and bore evidence of long-continued inflammation. Drainage was not demanded. Everything progressed favorably in this case until the ninth day, when, owing to a mistake, she received an overdose of belladonna; for several hours she was profoundly under the influence of the drug. She is now walking about, gaining flesh, and is better; her nervous system is more quiet, she has not menstruated since the operation, and I think hers a promising case of absolute recovery, not from the operation, for that is already a success, but restoration to health, which would be a gratifying fulfillment of the hopes and purpose of the operator.

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[*] An abstract of a paper read before the Tennessee State Medical Society, April 10, 1888.

Uterine Myoma; Exploratory Laparotomy; Recovery.—Miss A. B., aged thirty-four, white, presented herself to me with this history: In August last she had suffered from an acute exacerbation of pelvic inflammation, and had been confined to her room for two weeks. Up to that time her general health had been excellent. She was an active, robust woman, weighing one hundred and fifty-six pounds. When first seen by me, on March 13 last, she stated that she had been under the care of a physician for the last six weeks. He had applied local treatment to the uterus every day. Finding no improvement, she had sought my advice. I found on examination a distinct tumor, of about the size of a fœtal head, situated over and a little to the left of the uterus. The physician had called it a lump that would soon pass away. The patient herself had discovered the growth, but was positive that, as far as she was able to detect, the swelling had only existed six weeks. Slight menorrhagia, heavy, dull pains in the pelvis were the only symptoms.

Examination showed the tumor to be distinctly uterine, firm, hard, and inelastic. Taking into consideration the history of the case, the rapid development of the tumor and the great decline of health, exploratory laparotomy was determined upon, in the hope that the tubes and ovaries might be removed to arrest the growth of the neoplasm, the patient protesting against hysterectomy. During the two weeks of observation and preparatory treatment prior to operation, I could but notice a decided increase in the size of the tumor. On March 2d I opened the cavity, and found a large tumor springing from the fundus of the uterus and extending a prolongation into the left broad ligament. The tumor was firmly adherent to the bowel and all adjacent parts. The ovaries were so firmly adherent and small that it was thought advisable to let them alone. Seeing the hopelessness of the case, without entire removal of the uterus and tumor, the cavity was closed. The stitches were removed on the eighth day after the operation; the wound had healed entirely under one dressing. Two weeks after the operation, from some quite inexplicable cause, her temperature marked 105° F., pulse 130. She had one severe rigor, followed by sweat, nausea, and vomiting; gradually the symptoms passed away. She has now fully recovered and returned to her home in Kentucky. She is certainly none the worse for the operation; upon the contrary, the tumor, which was so large at the time of operation, has markedly diminished in size. Regarding the case as malignant, of course the outlook for this woman is gloomy.

Were we to place on record only our successful cases, our motives might be impugned. In the four cases, as reported above, good fortune has attended all my operations. Not so in this last case, which terminated fatally.

Gunshot Wound of the Abdomen; Laparotomy; Death.—At 1.30 A. M., on Friday, March 23d last, I was summoned to see John Mc. Some two hours before, while engaged in a difficulty, he had received a pistol-shot wound of the abdomen. I found him at his home, to which he had been removed after receiving the wound. He was in a state of profound shock, pulse barely perceptible. Administering hypodermatic injections of atropine, enemata of brandy, and hot water, I examined the wound, which was situated three inches above the umbilicus, an inch and a half to the left of the median line. Probing gave no satisfactory evidence as to the direction the ball had taken. Taking into consideration the size of the ball, the proximity of the weapon—about four feet—and the position of the wound, the inference was that it had penetrated the cavity. In support of this opinion, we had the general symptoms of visceral injury, prolonged and profound shock, tympanites, great pain, restlessness, and vomiting. This subject of penetrating wounds has been so well ventilated in late surgical literature, and the position taken by all men of authority is so determined, I could conceive of but one course open to me in the management of this case—*i. e.*, to enlarge the wound of entrance, ascertain if the ball had entered the cavity, and, if so, perform exploratory laparotomy. Briefly stating the supposed nature of the case to his family and friends, and gaining their full consent, I began preparations for an antiseptic operation, feeling convinced that the ball had entered the cavity. Owing to unavoidable delay, the operation was not commenced till 8 A. M.—about six hours from the time of my call. Morphine sufficient to relieve pain had been given him hypodermatically. With the patient anæsthetized, the wound of entrance was enlarged; it was found that the ball had passed directly into the cavity. Without more ado, the abdomen was opened by an incision eight inches in length; a decided fæcal odor was at once detected. The cavity was filled with blood, serum, fæcal matter, etc., all of which was sponged out carefully, without disturbing the relations of the intestines. Immediately under the parietal wound lay a coil of small intestine, dark with congestion and rough with the deposit of lymph. The convolution was found to be perforated; the wound received immediate attention, its edges were cleansed and dusted with iodoform, and the wound was closed with Lembert's silk suture. Now, removing the bowels from the cavity and protecting them with a towel wet with hot Thiersch's solution, further examination disclosed a perforation of the transverse colon. Through this the bullet had passed obliquely, its course being directed from the median line toward the left, so that the wound of exit from the colon was four inches to the left of that of entrance. The track was distinctly marked along the wall of the bowel. The wound of exit from the colon was large; the edges were everted and patulous. The contents escaped freely. Upon passing out of the colon, the ball had wounded a second convolution of the intestine. From this point the destination of the ball could not be ascertained. We were satisfied, however, from the anatomical relations, that there was no other wound of the viscera. The perforations in the colon were treated after the same manner as those in the jejunum. Now began the toilet of the cavity. Irrigation with hot Thiersch's solution and sponging at last cleansed the cavity. As the bowels were returned, careful search was again made for other wounds, but none were found. The line of incision was now closed and an ordinary dressing applied. Although the operation lasted an hour and a half, the pulse remained good. Immediately after the operation the temperature was 98°; it soon went up to 100°, with the pulse 110. I shall not enter into the details of this case further than to say that there was no nausea, but little pain or restlessness, no temperature over 100°, pulse 110, from the time of operation, Friday morning, until Sunday morning at three o'clock—forty-six hours. He then vomited freely, the pulse went up in an hour from 110 to 160, and the temperature from 101° to 105·5°. At first the pulse was full, but soon became weak and thready. On Sunday, at 12.30 P. M., after vomiting an enormous quantity of dark-green water, he died. The immediate cause was, I think, septic peritonitis.

This completes the record of my first five cases of abdominal section. In presenting them to you I have said nothing of antiseptic surgery. This was not an intentional oversight. I did not deem it necessary, for the reason that in this day of advanced surgery antiseptic methods are essential principles. I would as soon attempt an amputation without a knife as laparotomy without every antiseptic detail in the most minute particular. If antisepticism is a myth, its practice can do no harm. If it is a science, we reap the benefits. For excellence of results the advocates of antiseptic wound treatment challenge comparison.

Correspondence.

LETTER FROM PARIS.

Tar-water as a Hæmostatic.—Dilatation of the Stomach in connection with Surgical Operations.—Naphthol as a Germicide.—Salicylate of Lithine in Rheumatic Scleritis.

PARIS, *May 24, 1888.*

ABOUT the middle of the last century Berkeley published a book which was an enthusiastic study of the medicinal virtues of tar, but his over-praise only increased the rapidity of the fall of this agent in esteem. Of late years, however, a number of others have arisen to advise the use of tar in some form. One of the latest, Dr. St. Marc, details, in a late thesis presented to the faculty of medicine, the benefits to be derived from the use of distilled tar-water in all forms of hæmorrhage. To prepare distilled tar-water he advises as follows: Take two and a fifth pounds of tar, four and a half pounds of saw-dust of pine wood, and twelve quarts of water. Distill, and obtain six quarts of liquid. This is of a clear color and strong empyreumatic smell, provokes sneezing, has a slight astringent taste, and gives a sensation of heat to the mouth and throat. In hæmoptysis occurring in the first and second stages of phthisis it has produced considerable benefit. In order to cover the taste of the tar, it is often given as follows: Distilled tar-water, 15 drachms; syrup of tolu, 1 ounce; essence of lemon, 2 drops. The dose for twenty-four hours is about 2 ounces to stop any hæmorrhage, such as that from gastric ulcer, the epistaxis seen in chlorotic girls, and that of hæmophilia or congestive metritis. Its success is not certain, however, in carcinoma. Turpentine mixed with equal parts of olive-oil is used in cancer of the uterus, from much the same idea. In this case the vagina is carefully disinfected with permanganate of potassium, and small pieces of antiseptic cotton are imbued with the turpentine and oil, placed upon the ulcerated surface, and held in position by a vaginal tampon, which is changed frequently.

M. Bazy, one of our local surgeons, formerly attached to Professor Guyon's service, where so much rectal and genito-urinary surgery is done, calls the attention of the Academy of Sciences to the importance of dilatation of the stomach in patients who are to undergo a surgical operation. It is quite possible that a dilated stomach may coincide with certain pathological states occurring before or after any surgical intervention, and there is an important relation between these states, because dilatation of the stomach, according to Dr. Bazy, creates a favorable center for the spontaneous growth of micro-organisms, which will certainly degenerate into the infectious forms, and destroy the patient who may have been operated upon by a surgeon who does not himself, or through the patient's physician, search for this trouble. Dilatation then presents the danger of infection, and should be carefully sought for before all surgical operations, and so treated that it will not be a focus of infection after the operation. If it is noticed after an operation, suitable gastro-intestinal antiseptic treatment must be instituted at once to prevent other and more serious troubles.

While speaking of intestinal antisepsis it may be mentioned that in Professor Bouchard's laboratory and service at the hospital they are still experimenting on naphthol in this connecrtion. In cultivations of various microbes to which three pecent. of α-naphthol is added, in twenty-four hours all the micro-organisms were dead or dying. It took several days, however, before the same mixture became harmless when injected under the skin of animals.

The yearly congress of the *Société française d'ophthalmologie* has just been held in Paris. One or two of the papers were of general interest. M. Dufour, of Lausanne, Switzerland, spoke on the treatment of scleritis by the salicylate of lithine. He believes that this trouble is mostly of rheumatic origin, and in a test series of eleven patients he found that they all were ill during damp weather, and most of them better in warm, dry seasons. Gout would seem also to have its influence in scleritis, as it seems to affect the rich classes mostly, and when they go in for high alimentation—all those, in fact, who have a considerable deposit of uric acid in the urine. The doctor thinks that in these cases it is almost useless to continue local treatment, but better to try general treatment, and he relates his experience with many drugs—quinine, arsenic, even salicylate of sodium—but nothing seemed of use until he took to giving salicylate of lithine, in doses of thirty grains. This was well supported by the stomach and cured most of the cases. M. Grandelément, of Lyons, said that he had found that antipyrine, given by subcutaneous injections in the temporal region, had given him the best results, not only in this trouble but in all eye diseases where there was circumorbital pain, and whenever there was any spasm. It would also modify all the inflammatory processes of the globe of the eye, with ciliary pain. This referred to keratitis, iritis, and, in fact, all the painful affections of the eyes. The dose used was four grains of antipyrine in ten drops of distilled water, to which was added one twelfth of a grain of hydrochloride of cocaine.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 9, 1888.

ALSACE-LORRAINE IN MEDICINE.

Without venturing to comment upon the political aspects of the recent summary suppression of the *Société de médecine de Strasbourg*, we may express our regret at the occurrence—a regret that we are confident must be shared by medical men everywhere, even in the empire under whose sway the Rhenish provinces are now held. An organization that has contributed materially to the progress of medicine, as well since as before the Franco-Prussian war, has been swept out of existence; only for the time being, let us hope. The importance of its work has been moderately, but most effectively, set forth in a recent issue of the "Gazette hebdomadaire de médecine et de chirurgie," in a *feuilleton* signed by the editor-in-chief of that journal, M. Lereboullet. He gives a list of those who founded the society, in 1842, and recounts their notable contributions to literature, together with those of others who have since become members of the organization.

It seems that but few of the original members are now living, including Stoltz, Tourdes, Eugène Bœckel, and Strohl. Stoltz was one of the pioneers in insisting on the value of anæsthetization in obstetrics; he introduced into France the practice of bringing on premature labor in cases of pelvic contraction; and he is well known for his writings on perforations of the cervix uteri during labor and on vesico-uterine and vesico-abdominal fistulæ, and for his modifications of many obstetrical instruments. Tourdes, who for many years edited the reports of the society's proceedings, has also been an important contributor to the "Dictionnaire encyclopédique," and has furnished many other articles to recent literature, on such subjects as epidemics of cerebro-spinal meningitis, the pathogeny of goître, the mode of death by etherization, and on various anæsthetics. Eugène Bœckel, who has twice been the society's president, is widely known by his writings on phlegmonous periostitis, metallic sutures, the treatment of cysts, resections, urethrotomy, autoplastic operations, hip-joint disease, etc. Strohl, formerly an adjunct professor, is known as the author of works on therapeutics and hygiene.

Besides the founders, there are to be found in the list of members such names as those of Ehrmann, Sédillot, Rigaud, Schützenberger, Hirtz, Forget, Stœber, Caze, Kuss, the elder Lereboullet, Herrgott, Hecht, Feltz, Ruef, Dagonet, the Aronssohns, Eissen, Gros, Godelier, Michel, Monoyer, Netter, Willemin, Kœberlé, J. Bœckel, Meyer, Müller, Reibell, Herrenschmidt, Sieffermann, Kien, Goldschmidt, Ruhlmann, and Lévy. Many of these names are almost as familiar to American physicians as to those of France, and their mere enumeration is enough to show the material of which the extinguished society was made up. As individuals, such men can not be gagged, but those of them who are still living may be looked to for many further contributions to the advancement of medicine. It is to be hoped, however, that before long their usefulness may be increased by the revival of the society to which they belonged.

MINOR PARAGRAPHS.

THE MICRO-ORGANISM OF SCARLET FEVER.

In the May number of the "Cincinnati Medical News" we find an interesting correspondence between Dr. James Barnsfather, of Dayton, Ky., and Dr. Henry Cundell-Juler, of Cincinnati, in which the former refers to an old memorandum and drawing of his relating to the microscopical appearances that he found in 1875 in some liquid removed by aspiration from the thyreoid gland of a child suffering with malignant scarlet fever. His notes describe a comma-shaped bacillus occurring in clusters, with multitudes of minute purple granules evenly distributed through the menstruum. He states that at the time he took the granules to be spores, and supposed that he had discovered the microbe of scarlet fever, which fact it was his intention to announce in the "Cincinnati Medical News," the editor of which, however, advised him to wait until he met with the organism in another case. He adds that he has never since encountered it, but that he has not met with another case of the disease so malignant as the one that furnished the specimen. He asks the discoverer of any micro-organism now purporting to be that of scarlet fever to compare his observations with the one referred to.

THE NEW REPORTS OF THE CITY BOARD OF HEALTH.

In addition to many other signs of recent renewed vigor on the part of the Board of Health, it is to be commended for the excellent weekly reports which it now issues, more comprehensive and going more into details than any other similar publications that have come to our notice. Besides analytical tables of the New York mortality, they contain a tabular statement of the mortality of various American and foreign cities, returns of births, marriages, and still-births, and a record of meteorological observations at the Central Park Observatory. The reports reflect great credit upon the Register of Records, Dr. Tracy.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 5, 1888:

DISEASES.	Week ending May 29.		Week ending June 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	8	5	7	7
Scarlet fever	193	24	173	38
Cerebro-spinal meningitis	3	2	3	2
Measles	188	11	233	20
Diphtheria	154	47	152	67
Small-pox	4	1	15	3

The Association of American Institutions for Idiotic and Feeble-minded Persons will begin its twelfth annual meeting in Toronto, Canada, on Monday, the 18th inst., and proceed to Orillia the next day. Reports will be called for as follows:

"On the Causation of Idiocy, etc."; "On the Status of the Work before the People and Legislatures of the Various States"; "On the Development and Progress of the Institutions represented"; "Improvements in School Training and Hospital Care introduced during the Past Year"; and "Clinical Reports of Special Cases." An annual address, by Dr. George H. Knight, of Lakeville, Conn., is announced, to be succeeded by the following-named papers: "Clinical Notes on 'Mongolian' Idiocy," by Dr. A. W. Wilmarth, of Elwyn, Pa.; "Special Treatment of Paralytic and Epileptic Idiocy," by Dr. A. E. Osborne, of Santa Clara, Cal.; "Industrial Education at the Kentucky Institution," by Dr. J. Q. A. Stewart, of Frankfort, Ky.; "Kindergarten for Feeble-minded Children," by Dr. S. J. Fort, of Ellicott City, Md.; "A Study of Twenty Cases of Hemiplegic Idiocy at Elwyn," by Dr. William Osler, of Philadelphia; "Notes on Examination of Eyes at Elwyn," by Dr. Charles Oliver, of Philadelphia; "What is Meant by Physiological Education," by Dr. Isaac N. Kerlin, of Elwyn, Pa.; and "The Present Condition of the Education of Imbeciles in Great Britain," by Dr. George E. Shuttleworth, of Lancaster, England.

Dartmouth Medical College.—At the request of the faculty, Dr. Paul F. Mundé has consented to give the course of lectures on gynæcology this year, as it has been found impracticable to fill otherwise the vacancy caused by the death of Dr. Dunster. Dr. William H. Parish will give the course in obstetrics.

The Harvard Medical School.—The faculty has recommended the following appointments to the Board of Overseers: Dr. Frederick I. Knight to be professor of laryngology, Dr. William H. Baker to be professor of gynæcology, and Dr. Clarence J. Blake and Dr. J. Orne Green to be professors of otology and clinical otology.

The Cincinnati Press Club has established permanent quarters during the Centennial Exposition of the Ohio Valley and Central States at the exposition buildings, and is to dedicate them this evening, June 9th, by a reception and banquet. The exposition will continue from July 4th to October 27th. We beg to acknowledge the courtesy of an invitation to be present at the club's dedication of its quarters.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending June 2, 1888:*

Craig, F. C., Passed Assistant Surgeon. Detached from the Naval Hospital at Norfolk, and ordered to the Naval Hospital at New York.

Wentworth, A. R., Assistant Surgeon. Detached from the U. S. Steamer Galena, and ordered to the Naval Hospital at Norfolk.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending June 2, 1888:*

Devan, S. C., Passed Assistant Surgeon. Granted leave of absence for ten days. May 29, 1888.

Carrington, P. M., Passed Assistant Surgeon. Granted leave of absence for five days. May 29, 1888.

Society Meetings for the Coming Week:

Monday, *June 11th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *June 12th:* Massachusetts Medical Society (first day, Boston); Maine Medical Association (Portland); Delaware State Medical Society (Georgetown); Medical Society of the State of New Jersey (Lake Hopatcong); Oregon State Medical Society (Portland); New York Medical Union (private); Medical Societies of the Counties of Chemung (annual—Elmira), Chenango (semi-annual), Delaware (annual), Erie (semi-annual—Buffalo), Genesee (annual—Batavia), Livingston (annual—Geneseo), Onondaga (annual—Syracuse), Oswego (annual—Mexico), Rensselaer, St. Lawrence (semi-annual), Schenectady (semi-annual—Schenectady), Steuben (annual—Bath), Warren (annual—Lake George), and Wyoming (Warsaw), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Baltimore Gynæcological and Obstetrical Society.

Wednesday, *June 13th:* Massachusetts Medical Society (second day); Ohio State Medical Society (Columbus); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Societies of the Counties of Albany, Cayuga (annual), Cortlandt (annual), Dutchess (semi-annual—Poughkeepsie), Montgomery (annual—Fonda), and Sullivan (annual—Monticello), N. Y.; Philadelphia County Medical Society; Middlesex, N. J., County Medical Society (annual).

Thursday, *June 14th:* Michigan State Medical Society (Detroit); Rhode Island Medical Society (Providence); Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; New York Laryngological Society; Medical Society of the County of Cayuga (annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *June 15th:* Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *June 16th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

Henry Newton Crandall, M. D., of Westerly, R. I., died suddenly, of pneumonia, on the 31st of May. He was born in De Ruyter, N. Y., in 1848, and was graduated from the Jefferson Medical College, of Philadelphia, in 1869. Dr. Crandall was successful in his profession, and was widely esteemed for his sterling qualities as a man and as a physician.

Proceedings of Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of April 5, 1888.

The President, Dr. Thomas M. Drysdale, in the Chair;
Dr. J. M. Baldy, Secretary.

Multilocular Papilloma of the Broad Ligament, producing Obstruction of the Bowels; Operation; Death from Uræmia.—The President reported the case of a widow, fifty-four years old, to whom he had been called on the 7th of January, at the request of the family physician, Dr. A. G. B. Hinkle. In March of the year before she had been seized with intense abdominal pain and obstinate constipation, which, after the failure of other measures, had finally yielded to treatment for lead colic. She had continued, however, to suffer with constipation and colic, and her abdomen was constantly swollen. In August she had first felt a hard tumor low in the right side, and since that time her abdomen had increased rapidly in size and she had become emaciated. When the speaker first saw her she was anæmic, and had a cachectic appearance like that of malignant disease. The abdomen was greatly enlarged and resonant everywhere except below a line half-way between the umbilicus and the pubes; there it was dull, and fluctuation could be detected. In the right iliac region there was a hard, nodulated tumor, which appeared to be moderately movable. The bladder was prolapsed and projected between the thighs, but the uterus was apparently held up by being fixed to the tumor. As frequency of micturition was a prominent symptom, Dr. Hinkle had made frequent examinations of the urine, but had found nothing abnormal about it. The speaker also examined two specimens, and found them free from albumin and sugar, and of a specific gravity of 1·020. On the 17th she was found to have been suffering continually; the abdomen was extremely hard and dull on percussion throughout, with general fluctuation, showing that rapid effusion had taken place. On the 22d the speaker operated, with the assistance of his son and in the presence of Dr. Hinkle, Dr. James F. Wilson, Dr. J. Howard Beck, and Dr. G. B. McCracken. The tumor, which filled the upper part of the pelvis and the lower part of the abdomen on the right side, was extensively adherent, and its removal was consequently tedious, lasting over an hour. During the operation the pulse was well maintained, but this was followed by profound shock, shown in the pale face and thready, almost imperceptible pulse. As soon as the patient regained consciousness she complained of intense pain in the back. Under the use of stimulants and the external application of heat, she reacted in about an hour. Four hours after the operation the nurse removed an ounce and a half of urine with the catheter, but three hours later Dr. Hinkle and the speaker found the bladder empty. The pulse was then 112 and the temperature 100·2° F., which was the highest point reached. She complained of feeling sore in every part. To relieve the suppression of urine, a mustard plaster, made with warm water, was ordered to be applied over the kidneys, and a tablespoonful of the following mixture, well diluted with water, to be taken every four hours:

Potassium acetate....................	$\frac{1}{2}$ oz.;
Spirit of nitrous ether.......	$\frac{1}{2}$ fl. oz.;
Distilled water.........	$3\frac{1}{2}$ oz.

Other diuretics were used, including calomel, and the hot vapor bath was employed, but the subsequent secretion of urine was trifling, and the patient died on the evening of the third day. At the autopsy the right kidney was found to have been almost wholly converted into a cyst, only a small portion of its normal tissue remaining. The left kidney was enlarged and intensely congested; when its adherent capsule was removed, the surface of the gland presented the rough, granular appearance of inflammation; there were several small cysts in its cortical substance.

The case presented several features of interest, but it had been related chiefly to show how one might be deceived as to the state of the kidneys even when all signs of disease were lacking in their secretion. The patient's life had depended on the action of one kidney, itself diseased, and the toxic effect of the ether had so added to its burden that it had yielded.

Dr. Parrish alluded to the case of a patient of his who, some years before, had died of acute suppression of urine after the Porro-Müller operation. It was a serious question, he said, what anæsthetic should be used under such circumstances.

Dr. J. Price said that there was only one author who made any mention of the condition of the temperature under ether anæsthesia. Some years ago Dr. Burk had taken the temperature of a number of etherized subjects, and had found that there was invariably a depression of from one to two degrees, due to cessation of combustion.

The President thought that the fall of temperature was not due to the anæsthetic, but to the uræmia, as he had repeatedly noted a similar depression in advanced stages of Bright's disease.

Rupture of a Branch of the Umbilical Vein.—Dr. Hamill showed a placenta illustrating this lesion. Hæmorrhage into the placenta, or placental apoplexy, he said, was not rare. In the earlier stages of placental development the maternal capillary loops thrown into a network around the chorionic villi not infrequently ruptured, with consequent effusion of blood over a greater or lesser area, and at a later period of development the blood-current in the intervillous blood-spaces, always sluggish, might become so very slow that the blood coagulated, and at birth a clot might be seen of varying extent, more or less perfectly organized, and in some cases presenting just the laminated appearance seen in an aneurysm undergoing obliteration. Rupture of the umbilical vein in the cord, with a rather extensive effusion of blood, had also been noted, but in such a case the quantity of blood that could escape was of necessity limited to the comparatively small capacity of the cord. In the case to which the specimen belonged the placental apoplexy had been of fœtal instead of maternal origin; the ruptured vessel was one of the large branches of the umbilical vein running across the fœtal surface of the placenta, and the quantity of blood effused must have left the fœtal body absolutely exsanguinated. All these circumstances made the specimen a rare one, and the last two made it quite unique so far as his knowledge went. He had been unable to account for the rupture of the blood-vessel; there was nothing in the condition of the fœtus or in the history of the mother that would explain it.

Dr. Hirst thought that a somewhat similar case had been described by Baudelocque.

Dr. Kelly said that he had in his possession the placenta and membranes from a recent case of delivery, in which moderate traction on the cord, after the birth of the child, had resulted in a large hæmorrhagic extravasation between the placenta and the amnion, which was found to have come from a minute rupture in the vein on the placenta just as it left the cord, about 2 mm. in length, and transversely to its axis.

Morning Sickness in the Husband.—Dr. Hamill remarked that the occurrence of morning sickness in the husband, after the fact of pregnancy was known or suspected, he had frequently noted; but the case which he was about to speak of was unique from the fact that the sickness appeared in the husband at such an early period of pregnancy. Two weeks after the appearance of menstruation for the last time, the husband had daily morning attacks, and not until it was time for the next menstruation had the woman any other evidence that conception had taken place. The husband's attacks continued for two months. During his wife's previous pregnancies he had suffered from like attacks, but not until he and his wife had both become aware of the existence of pregnancy.

A Strangulated Ovarian Cyst was shown by Dr. Parrish. The patient had not been aware that anything ailed her until one night she was seized with intense abdominal pain, and, jumping out of bed, ran about the house screaming with her suffering. Dr. J. H. Musser was sent for, and gave her a hypodermic injection of morphine. The dose had to be repeated frequently, and in two days the pain began to subside, and was altogether gone in five days. The temperature remained nearly normal until the fourth day, when it was found to be 103°, and it was the same on the next day, when an operation was performed. It was noteworthy that the temperature and pulse had both risen steadily, while the pain had as steadily decreased after the third day. The tumor was found to spring from the left ovary, and was very black. Besides the ordinary contents of an ovarian cyst, it contained coagulated blood. The pedicle was twisted three times, and was quite black. The patient had recovered rapidly. Twisting of the pedicle was a well-recognized accident, but not in all cases were such marked changes found as in this one.

In connection with this case, the speaker would mention one in which he had operated three months before. The woman had complained of sudden intense pain in the pelvis, and been confined to bed from that moment, remaining in bed for more than two months with general peritonitis. A number of physicians had attended her, and one of them had introduced an exploring needle into the abdomen. She was extremely exhausted, and had a constant temperature of 103°, or higher. An incision was made above Poupart's ligament, opening into a tumor, which was found to contain pus and coagulated blood. Its cavity was cleansed, and the incision was closed around a drainage-tube. The cyst was thought to be intraperitoneal. In three days strangulation of the bowels developed, with fæcal vomiting. The bowels could not be made to act, and a second operation was proposed on the next day, but was declined. On the following day, however, a second incision was made, from a point below the spleen toward the first incision. There was distension of the abdominal wall in the lumbar and hypochondriac regions, and great pain under the spleen had developed. The intestines were found adherent in a mass, and three large bands were found extending from the region of the spleen to the right inguinal region. The adhesions were broken up, and these bands were tied and cut. No irrigation was used. The whole wound was closed, and a large piece of adhesive plaster was placed over it to protect it from the discharges from the lower incision. Recovery was slow, but satisfactory.

Hydramnios.—Dr. Hirst reported two cases of hydramnios. The ætiology of this affection, he said, was so obscure that, according to Bar, forty-four per cent. of all cases admitted of no explanation; therefore, every case that could be traced to a distinct cause was of interest. The first case was that of a young primipara, who was brought to the Maternity Pavilion of the Philadelphia Hospital in the first stage of labor. The abdomen was enormously distended, globular, and distinctly fluctuating. The os uteri was of about the size of a dollar, and an amniotic sac, very tense, filled the greater part of the pelvis; to one side of and above this a small fœtal head could be felt, evidently macerated, covered with its membranes, with no intervening liquor amnii. The diagnosis was plain—twin gestation, with dropsy of one amniotic sac, which was obstructing labor by preventing the descent of the fœtus contained in the normal sac. The distended sac was ruptured, the edges of the rubber sheet on which the woman lay were gathered up, and all the escaping fluid was caught; it measured five quarts. The macerated fœtus was speedily expelled, and a living one soon followed. The latter corresponded to about the eighth month of gestation; the former had apparently died at an earlier period. The woman said that until within five weeks she had noticed nothing unusual in her condition, but that since that time her abdomen had rapidly increased in size, without, however, causing her much inconvenience. To explain this case, the speaker thought, Werth's theory should be called upon. According to that observer, an hypertrophied placenta, by absorbing more fluid from the maternal blood than the fœtal economy could dispose of, brought about hypertrophy of the fœtal heart and kidneys, with consequent polyuria; in addition, the increased pressure within the umbilical vein favored a transudation of fluid through the amniotic covering of the placenta. In the case under consideration the placenta was of quite twice the size of a normal single one, with extensive anastomoses between the two sets of fœtal vessels. One fœtus having died, the other one had suddenly been called upon to deal with the very large quantity of fluid abstracted from the maternal blood by an enormous placental surface—an impossible task, so that the excess of liquid had to be got rid of by excretion and transudation into the amniotic cavity.

In the second case the woman was a multipara with serious heart disease—mitral regurgitation and aortic stenosis. The quantity of liquor amnii was estimated to be four quarts. If one accepted Tarnier's idea, the speaker remarked, all cases of hydramnios might be divided, ætiologically, into two broad classes, depending either on overproduction of liquor amii or on its insufficient absorption. It would seem that this case should be classed under the latter division. The veins were choked with blood, the circulation was sluggish to a degree, and, if it was true, as it seemed to the speaker, that some of the liquor amnii was absorbed by the maternal vessels, the absorption was here reduced to the minimum.

Adherent Placenta; Post-partum Hæmorrhage.—Dr. Hirst also said that he had recently been called by a medical student to see a woman who had just given birth to a child. He found her almost bloodless and the child dead. The woman's friends declared that the baby had been born while the mother was on her feet, and been killed by dropping to the floor; also, that the after-birth had not come away. A vaginal examination showed no trace of cord or placenta. On passing the hand into the uterus, however, the placenta was found glued fast to the uterine wall, and so firmly adherent that considerable force was necessary to detach it. The cord had been torn away from the fœtal surface of the placenta, leaving a spot about as large as a dollar bare of amnion. The large branches of the umbilical vein had been torn across.

A Comparison of Hospital and Out-door Obstetrical Practice.—Dr. J. Price made a report on this subject, premising that he did not intend to discuss at length the old question of home *vs.* hospital practice in obstetrics, for that whole matter had been fully considered, and there were some excellent publications on the subject. Maternity hospitals must exist for destitute women in need of shelter and assistance. To compare the results in out-door practice, where patients resided in unsuitable and insanitary localities, with those of a well-organized maternity hospital was impracticable without an immense amount of labor and statistics. To diminish maternal mortality was the chief object of the obstetric art. In a maternity hospital difficult and complicated cases were met with, among a class of patients particularly prone to the accidents incident to parturition. Such patients could not receive the services of trained attendants at their homes; they were admitted into the hospitals because there skill could do more for them in averting danger and death. There were many cases which foiled the most consummate skill; again, there were simple complications that defeated the inexperienced physician and the midwife. At the Retreat he aimed at the highest degree of surgical cleanliness; if dirt were done away with, all would go well. All effete and refuse matter was removed from the building at once, the air in the wards was kept in motion, and every attention to matters of detail, especially to kindly and cleanly nursing, was insisted on. The speaker had never been able to understand why the results of out-door practice among the poor, who had inadequate means of procuring the necessary comforts of life even in health, and who made no provision for themselves in childbirth, should be perceptibly better than the results in hospital practice. He was aware that the statistics of out-door lying-in patients had been pronounced unreliable and wholly worthless. In order to satisfy his own mind on this question, he had made a careful analysis of the cases that had come under his own charge for a period of almost three years. The rule in regard to dispensary cases had been attendance by graduates or students in medicine, during confinement and convalescence, for at least ten days, and in the same manner as in private practice. All complications required the presence of himself or some physician of experience. All accidents in cases of difficult labor had been due to delay in asking for assistance; everything lay in promptness. The speaker then gave a statistical summary of the practice at the Preston Retreat and at the Philadelphia Dispensary.

A Report of Cases of Laparotomy during the Year 1887 was read by Dr. William Goodell. There had been 53 operations: 27 ovariotomies, with 22 recoveries and 5 deaths; 19 oophorectomies, with 18 recoveries and 1 death; 1 hysterectomy, ending in recovery; 1 operation for malignant tumor of the omentum, ending in death; 2 operations for pelvic abscess, both ending in recovery; and 3 exploratory incisions, all followed by recovery—in all, 46 recoveries and 7 deaths. With regard to the fatal cases, the first one was a case of malignant papillary cystoma of both ovaries, in which every abdominal organ had seemed to be infected; bleeding from intestinal adhesions called for several ligatures and the application of Monsel's solution; insurmountable intestinal obstruction took place, and the woman died on the seventh day. The second fatal case was that of a short but exceedingly fat woman, weighing 254 pounds, who could not walk without assistance. The area of raw surface made by the wound was the most extensive that the speaker had ever seen. Both ovaries were diseased, and were removed; they had contracted adhesions to the abdominal wall, and the larger one weighed only about twenty pounds. The lady was operated on at her own home, in the country, and was not again seen by the speaker. She died on the fourth day, from peritonitis. The third case was a forlorn hope; at the time of the operation the patient had septicæmia, was delirious and very ill, and suffered great pain, so that her shrieks disturbed every patient on the same floor with her at the University Hospital, although she had been placed in a remote room. The cyst was intraligamentous, and was adherent to the abdominal wall, the intestines, the stomach, the aorta, the uterus, and the whole pelvic cavity. All but the pelvic adhesions were severed; those were not touched, as the woman seemed to be dying and it was apparent that she could not survive the shock of a completed operation. Many stimulating hypodermic injections were given during and after the operation, but she never rallied, and died seven hours afterward. The fourth case was that of a bedridden and very emaciated woman in whom the cyst had burst several weeks before, and who was being slowly poisoned by the absorption of the colloid matter. The cyst was adherent everywhere, and every abdominal organ seemed infected. The peritoneal cavity was flushed and drained. The patient died on the eighth day, from sheer exhaustion. The fifth death was in a case of putrid dermoid cyst, the patient being bedridden with septicæmia. During the operation, while very firm adhesions were being severed, the cyst-wall was torn and a very small quantity of the offensive liquid escaped into the abdominal cavity. The cavity was flushed and drained, but the lady died on the fifth day, of septicæmia. Of the nineteen oophorectomies, more than the usual number were difficult, both from adhesions and from the size of the fibroid tumors for which the ovaries were removed. In the only fatal case death was due to uræmia from suppression of urine, unsuspected kidney disease having probably existed previously. Of the seven remaining laparotomies, one had resulted in death on the forty-eighth day. It was a case of malignant solid tumor of the omentum, causing ascites and excessive pain, with which the patient had been confined to bed for many weeks. The great vascularity of the parts and the very extensive adhesions to the intestines made the operation a difficult one. For two weeks the patient did well; then large abscesses burst from the wound and into the intestines, and the drain destroyed her life. In the two cases of pelvic abscess the sac was sewed to the lips of the abdominal wound and a drainage-tube inserted. The hysterectomy was performed on account of the pain and vesical irritation produced by a two-pound subperitoneal uterine fibroid. The three exploratory incisions were made respectively for sarcoma of the uterus and ovaries, for malignant disease of the intestines, and for a uterine fibroid. In the last one, the intention had been to remove the ovaries, but, on account of very firm and deep-seated adhesions, those organs could not be reached. In the two other cases malignancy was suspected, but the operation was performed to make out a positive diagnosis. An unusually large proportion of the ovariotomies had been difficult, but the speaker had not declined to operate in any case that had presented itself.

Dr. Kelly had been much pleased with the careful attention given by Dr. Goodell to points that were usually looked upon as of minor importance, but that were essential to success. One of the most important was that of checking hæmorrhage from intestinal and other adhesions. A satisfactory method for small areas on the abdominal wall was that of passing a needle under the peritonæum and carrying several threads across the bleeding area; then tying them so as to bring raw surface to raw surface. The speaker had seen Zweifel, of Leipsic, invert a *large* bleeding area on the abdominal wall, and, transfixing skin, muscles, and peritonæum from without, fasten a number of sutures to ivory rods on either side of the skin-flap thus formed. He had frequently used the cautery in times past, but not recently. In a recent case of severe general hæmorrhage from the whole broad ligament, after removal of a distended Falloppian tube, he had checked the bleeding by a series of ligatures inclosing the whole broad ligament from its pelvic attachment to the uterus, introduced entirely beneath the raw surface. A practical point of the utmost importance, on which the speaker would insist, was that when the bleeding was checked all danger was not over ; whenever there had been much stripping of peritoneal adhesions, in spite of the fact that the bleeding might have been checked, sometimes a profuse flow of lymph took place into the abdomen, and, if it was not carried off at once by the peritonæum, formed an excellent cultivation field for the few bacteria which were almost sure to enter at any operation. The drainage-tube met this danger. He had seen a good many cases of rectal fistulæ that had been very troublesome, but the tendency seemed to be to heal. The peculiar liability of purulent cases to this accident was readily accounted for by the tendency of the abscess to form rectal adhesions, and, ulcerating through, empty itself by the rectum; in many cases the wall between the rectum and the abscess must be very thin. The best after-treatment in abdominal cases was to put the patient into the hands of a trained nurse, and leave much to her judgment.

Dr. Goodell liked to give credit to his fellow-countrymen whenever it could be done, and, if he was not mistaken, the credit of first doubling the peritonæum on itself, and maintaining the bleeding surfaces in contact with pins or quill sutures, was due to Dr. Kimball, of Lowell. Several years ago the speaker had resorted to this plan, but not since he had used Monsel's solution or Paquelin's cautery.

NEW YORK ACADEMY OF MEDICINE.

Meeting of February 16, 1888.

The President, Dr. A. Jacobi, in the Chair.

Cholera Infantum and the Weather, with Charts.—Dr. A. Seibert, the author, said that it might seem almost superfluous to read a paper on acute gastro-intestinal disturbances of infancy and the weather, yet if one would take the trouble to inquire, he would be astonished at the variety of opinions on this subject, showing that definite knowledge concerning it had not yet been arrived at. He had collected all the cases of acute gastro-intestinal catarrh in children under five years of age that had been treated during the time of his service in the children's department of the German Dispensary, a period of ten years (from 1878 to 1888); these cases he had arranged according to their date, and had then compared their frequency with the exact meteorological phenomena of every day during those ten years.

From January, 1878, to January, 1888, the total number of cases had been 8,036. By adding up the total number of cases for the several months separately he had produced the black line in the chart, while the red line indicated the temperature for the corresponding periods. The charts demonstrated that in November, December, January, February, March, and April there were but very few cases of acute gastro-intestinal catarrh in children; that in May there were a few more; that during June, July, August, September, and October this disease was frequently met with. The difference between these two halves of the year was so marked that the term summer complaint seemed very proper. This difference suggested that potent agencies must prevail during the warm months leading to the development of this malady. During the ten July months there had been 2,443 cases, during the ten February months 117 cases. The monthly averages were only guides to the truth in statistics of this kind, but were utterly unreliable as conclusive evidence. It would be seen that the disease was present even during the coldest months. There was the greatest difference in morbidity during June and July, while the difference in temperature was not so great between June and July as between May and June. The August months had a morbidity of 1,524 cases, one third less than the July months, while the corresponding red line showed the difference of temperature to be smaller. The mortality from diarrhœal diseases in children under five years of age, as shown by the statistics of the health board, was one half as great for August as for July. The statistics showed that the mortality from the disease was relatively the same all the year round; if one in four who had the disease during July died, it would be found that one in four who had it in February also died.

In July, 1881, the mean temperature had been 80° F., in August it had been also 80°, while in September it had been 81°. Yet there had been 290 cases of acute gastro-intestinal catarrh in July, only 223 in August, and only 137 in September. Also, when a comparison based on the temperature was made for different summers, it was found that the death-rate might be greater for one summer than for another, while the temperature in the former was on the average lower. The same rule held when the morbidity and mortality of the same month of different years were compared; there was no certainty that a month of one year having an average low temperature would give a smaller morbidity or mortality than the same month of another year when the temperature average was higher. It was also shown by charts that this relative morbidity and mortality for summer months was not apparently affected by much or little rain-fall nor by dry or humid days. Nor was the mortality greatest in those months having the greatest number of hot days. There might also be free air-currents with moderate summer temperature, yet the charts in these cases did not show lower morbidity than under other meteorological conditions.

Thus far, the author said, we were justified in making the following statements—namely, that hot weather, either dry or moist, was not necessary for an epidemic appearance of summer complaint; second, warm weather, either dry or moist, showing minimum daily temperatures of not less than 60° F., brought on an epidemic appearance of cholera infantum invariably in every year, irrespective of the height of the maximum daily temperature; third, summer complaint lost its epidemic character as soon as the minimum daily temperature remained below 60° F., as in the latter half of October of nearly every year; fourth, therefore this disease could not be brought about by the direct working of high temperature on the infantile body, but must have other causes.

What might those causes be? The speaker suggested that milk food was one cause, for milk was brought to the city at night, was milked in the evening, was jostled over the streets, and was thus exposed to conditions favoring decomposition before it reached the children. Dr. Cyrus Edson had written to him that milk exposed to a temperature of 60° F. turned readily; and Superintendent Birdsall had stated that when the water in the lakes supplying the city reached a temperature of 60° F., it assumed a taste indicative of decomposition of vegetable or animal organisms. He would explain the higher morbidity in July as compared with August by the fact that in the latter month public attention had been fully aroused to the dangers surrounding the children, and perhaps to other conditions.

Dr. L. E. Holt said that, as bearing on the minimum daily temperature necessary to create an epidemic of acute gastro-intestinal catarrh, it was an interesting fact, taken in connection with the minimum temperature set by Dr. Seibert—namely, 60° F.—that a gentleman in Liverpool had found that in that city a difference of temperature of only three tenths of a degree had led to a mortality nearly three times as great, the minimum daily temperature during the two periods having been a little less than 60° F. But in another respect the statistics referred to differed from those given by the author of the paper. They showed that the average temperature of September had been about 4° lower than that for August, it having been 58° in September, while in August it had been 62° F., yet the mortality had been greater in September than in August. The speaker thought that in discussing cholera infantum we had not yet arrived at the point where we could say what cases were cholera infantum and what should be considered as some other form of diarrhœal disease. To him it seemed that the factors in the production of the disease under discussion were four—namely, heat, feeding, surrounding, and constitution. The more of these factors present, the greater the frequency of the disease, and also the greater the mortality. Heat was directly or indirectly the most important single factor.

Dr. J. Lewis Smith agreed with Dr. Holt that cases of what were called summer diarrhœa were not all of the same disease. The gross anatomical characters might be the same, yet the ætiology might be different in the different cases. He thought there was perhaps an error in comparing the diarrhœa occurring during hot weather with that occurring during cool weather, for while the cases might appear very much alike, yet the causation was probably different. The two classes of cases differed as much as the bronchitis caused by measles differed from an idiopathic bronchitis. Again, there was liability to error in comparing the mortality from summer diarrhœa in July, August, and September. Deaths occurring in the last two months were likely to be largely in the cases of patients whose disease had developed in the previous month. The mortality was greater in September than in May, although the speaker believed that the temperature was somewhat lower in September. In his own statistics he had not observed that difference in favor of July over August which Dr. Seibert had pointed out. He believed that the statistics of the Health Board showed nearly as large a mortality in August as in July. The speaker thought we could state in a general way that heat was the cause of summer diarrhœa, but in what way it acted had not been thoroughly ascertained. Inasmuch as the disease occurred principally in cities and not in the country, it would appear that something besides heat was required to develop it. The opinion was gaining ground among scientific investigators that the disease was due to a micro-organism.

Dr. CAILLÉ objected to the title of the paper, "Cholera Infantum." While he agreed with Dr. Seibert that decomposing milk might cause summer diarrhœa in children, yet he believed that heat alone was a factor, for it was known that this agent exerted a pernicious influence upon the human economy, and therefore it might pave the way for the reception of the noxious material which directly caused the diarrhœa. To explain the lesser mortality in August, the speaker suggested that many children were taken from the cities after July.

Dr. JACOBUS suggested that the greater mortality in July over August might be due in part to the more delicate constitution of children at the close of winter.

The PRESIDENT said it appeared to him that what we were in the habit of calling cholera infantum was not always the same thing; that some of the cases were those of gastro-intestinal catarrh, while others which often came on suddenly and terminated fatally in a few days were of another disease. The latter were more apt to occur during hot weather and were probably due to heat. The author's observations on the minimum daily temperature at which summer diarrhœa developed were very interesting, and gave the speaker renewed encouragement to teach what he had been teaching for the past thirty years regarding the preservation of milk in refrigerators, and the use of barley-water—how to select, prepare, and give the food.

Dr. SEIBERT said his cases included only acute gastro-intestinal catarrh, and he employed the term cholera infantum only because it was short. Regarding the greater mortality in July than in August, his statistics were accurate, notwithstanding the impression of all whom he had asked, except the president, was that the mortality in August was as great as that in July; but their impression had not been based on the study of statistics. While September, he said, might have an average temperature nearly the same as that of May, yet its average minimum temperature was higher, which would account for the greater frequency of summer diarrhœa during that month. He emphasized the importance of teaching the poor people that they should take precautions against summer diarrhœa, and put their milk into a refrigerator as soon as the season became warm, and not wait for hot weather.

Book Notices.

Medical Lectures and Essays. By GEORGE JOHNSON, M. D., F. R. C. P., F. R. S., Fellow of King's College, London, etc. London: J. & A. Churchill, 1887. Pp. xxxii–900.

THE greater part of this portly volume is composed of a revised republication of numerous papers written during the past twenty years, and the small amount of revision needed in even the earliest of them, notwithstanding the rapid pace of pathological investigation in the interval, gives evidence of the sound judgment and clinical acumen of their accomplished author, and should obtain respectful consideration for such of his views as have not yet gained general acceptance.

The key-note, so to speak, of some of Dr. Johnson's best-known doctrines is to be found in his explanation of the "stopcock" action of the arterioles in regulating, and under certain conditions arresting, the circulation of the blood, to which he was the first to ascribe many of the phenomena of cholera, epilepsy, Bright's disease, acute apnœa, etc. Four of the opening chapters are devoted to a republication of his former utterances concerning the physiology and pathology of the circulation, after which we come to a newly written essay on cholera, embodying and enlarging upon the arguments originally published in 1866, wherein, as our older readers will doubtless remember, the author stoutly combated existing opinions regarding the pathology and treatment of the Asiatic disease, pointing out that the phenomena of collapse were not commensurate with a drain of liquid from the blood, that, on the contrary, arrest of the purging was commonly a sign of fatal import, and advocating the evacuant plan of treatment. It would be unjust to attempt to discuss the merits of this elaborate disquisition within the narrow limits of our space, but, however it may contravene the teaching of some contemporary writers on cholera, it is worthy of thoughtful perusal by every rational physician.

In Chapter XLV Dr. Johnson has revised the "Lectures on Bright's Disease" which made his name a household word fifteen years ago, and in the present edition he retracts nothing of his previous conclusions, but rather re-enforces them in the light of later observation. He differs with Senator, Bartels, and other modern writers as to the mechanism of albuminuria, holding that a morbid condition of the blood, of constitutional origin, exerts its influence primarily and chiefly upon the glandular epithelium of the convoluted tubes, changes in the Malpighian capsules being secondary results, not dependent on local inflammatory action. He still disputes the distinction of "parenchymatous" and "interstitial" nephritis, contending that the process in the cirrhotic kidney is essentially tubular and intratubular, leading to destruction of the glandular epithelium of the convoluted tubes, with thickening of the arterial walls, and that what has been mistaken for increase of connective tissue is really the conjunction of thickened and fibrillated tubular basement membrane with atrophied remains of shrunken tubes and intertubular capillaries. He describes an increase of connective tissue between the elastic and endothelial layers of the arterioles, with hypertrophy of the muscular coat, as a compensatory accompaniment of augmented pressure from the hypertrophied left ventricle, and denies the "hyaline fibroid" change in the adventitia, taught by Gull and Sutton, which he pronounces to be simply a glycerin-soakage of the thickened muscular coat. The "large white kidney," commonly resulting from an acute attack, and adopted by some writers as the type of chronic parenchymatous inflammation, he divides into three stages: simple enlargement, granular fatty degeneration, and atrophy with coarse surface granulations. The section on albuminuria not associated with Bright's disease is very instructive, especially as regards the different possible sources of puerperal albuminuria. Chapter XLVII contains a critical comparison of the various tests for glycosuria, with a defense of the author's favorite method by means of picric acid, and a philosophical distinction between saccharine dyspepsia and saccharine diabetes.

Among other excellent papers, particular notice is due to one on the varying clinical significance of hæmoptysis, pointing out that it may sometimes be as harmless an accident as bleeding from the nose, and another on differences between the physical signs beneath the clavicles on the two sides of the chest in healthy subjects, with which every diagnostician should make himself familiar.

As a whole, the volume is not a mere collection of ephemeral papers, but a monument of able and industrious pathological and clinical work, covering a wide range of practice, and fully justifying the high professional reputation of its author.

BOOKS AND PAMPHLETS RECEIVED.

A Year's Work in Abdominal Surgery, with a Report of Eighty Laparotomies done in 1887. By W. Gill Wylie, M. D., New York. [Reprinted from the "Medical Record."]

One Hundred and Ten Laparotomies for the Removal of the Uterine Appendages. Sixty-one Consecutive Operations without a Death. By W. Gill Wylie, M. D., New York. [Reprinted from the "Annals of Gynæcology."]

Ueber den Zusammenhang von chronischen Verstopfungen der Nase u. des Nasenrachenraums mit Unterleibsbrüchen. Von Dr. W. Freudenthal, Arzt an der deutschen Poliklinik in New York. [Separat-Abdruck aus der "Monatsschrift f. Ohrenheilkunde sowie f. Nasen-, Rachen-, Kehlkopf- u. Luftröhren-Krankheiten."]

A Case of Icterus Infantum from Congenital Deficiency of the Ductus Communis Choledochus. By John Blake White, M. D., New York. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Six Cases of Uterine Displacements treated by Shortening of the Round Ligaments, with Remote Results. By Charles P. Strong, M. D., Boston. [Reprinted from the "Boston Medical and Surgical Journal."]

Cerebral Symptoms in the Pneumonia of Children. By L. Emmett Holt, A. M., M. D., etc. [Reprinted from the "Medical Record."]

Suppurative Exfoliative Cystitis. By H. J. Boldt, M. D., New York. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Inguino-properitoneal Hernia. By William Stone Torrey, M. D., Brooklyn, N. Y. [Reprinted from the "Annals of Surgery."]

The Milroy Lectures. On Epidemic Influences. On the Epidemiological Aspects of Yellow Fever. On the Epidemiological Aspects of Cholera. By Robert Lawson, LL. D., Inspector-General of Hospitals, late President of the Epidemiological Society, etc. London: J. & A. Churchill, 1888. Pp. iv–95.

Pathology and Treatment of the Infectious Diseases. Part I. The Miasmatic and Miasmatic Contagious Diseases: Intermittent Fever, Typhoid Fever. By Professor Karl Liebermeister, Professor of Clinical Medicine in Tübingen, Germany. Translated by E. P. Hurd, M. D., Newburyport, Mass. With Notes and Appendices. Detroit: George S. Davis, 1888. [The Physician's Leisure Library.]

A Manual of the Minor Gynæcological Operations. By J. Halliday Croom, M. D., F. R. C. P. E., F. R. C. S. E., etc. First American from the Second Edinburgh Edition. Revised and enlarged. By Lewis S. McMurty, A. M., M. D., etc. With numerous Illustrations. Philadelphia: Records, McMullin & Co., 1888. Pp. 228.

The Results of Laparotomy for Acute Intestinal Obstruction. By B. Farquhar Curtis, M. D., Attending Surgeon to St. Luke's Hospital, etc. [Reprinted from the "Transactions of the Medical Society of the State of New York."]

Early Diagnosis of Tubercular Meningitis in Children. By H. L. Elsner, M. D., Professor of Clinical Medicine, Syracuse Medical College. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Atlas of Venereal and Skin Diseases. Comprising Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus V. New York: William Wood & Co., 1888.

Sulla natura parassitaria dei tumeri cancerosi. Comunicazione preventiva del Dottore Ignazio Lampiasi-Rubino. [Estratto dal giornale "La Riforma Medica."]

Proceedings and Addresses at a Sanitary Convention held at Traverse City, Michigan, August 24 and 25, 1887, under the Direction of a Committee of the State Board of Health and a Committee of Citizens of Traverse City. [Supplement to the "Report of the Michigan State Board of Health" for the Year 1887.]

The Principles of Cancer and Tumor Formation. By W. Roger Williams, F. R. C. S., Surgical Registrar to the Middlesex Hospital, etc. London: John Ball & Sons, 1888. Pp. 194.

Heart and Blood-Vessels in the Young. By A. Jacobi, M. D., New York. Address before the Association of the Alumni of the Long Island College Hospital, February 27, 1888. [Reprinted from the "Brooklyn Medical Journal."]

The Sixty-fourth Annual Report of the Officers of the Retreat for the Insane at Hartford, Conn., April, 1888.

Vesico-vaginal Fistula. By Reuben A. Vance, M. D., Cleveland, O. [Reprinted from the "Cleveland Medical Gazette."]

Fifty Aphorisms in Pregnancy. By E. J. Kempf, M. D. [Reprinted from the "American Practitioner and News."]

A New Method in the Treatment of the Vegetable Parasitic Diseases of the Skin. By Henry J. Reynolds, M. D., etc., Chicago. [Read before the Section in Dermatology of the Ninth International Medical Congress.]

Stricture of the Urethra. Urethrotomy under Cocaine Anæsthesia. By Henry J. Reynolds, M. D., etc., Chicago. [A Clinical Lecture delivered at the College of Physicians and Surgeons, Chicago.]

Certain Facts regarding Fertility, Utero-gestation, Parturition, and the Puerperium in the so-called "Lower" or "Laboring Classes." Observations made in the Woman's Clinic of the Central Dispensary and Emergency Hospital, Washington, D. C. By George Woodruff Johnston, A. M., M. D., Director of the Clinic. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Annual Report of the Provost of the University of Pennsylvania, including Reports of Departments and Abstract of the Treasurer's Report. For the Year ending October 1, 1887.

On Exercise for the Prevention and Cure of Deformities. By A. H. P. Leuf, M. D., of the University of Pennsylvania. [Reprinted from the "Medical and Surgical Reporter."]

The Intra-uterine Stem in the Treatment of Flexions. By A. Reeves Jackson, A. M., M. D., etc., Chicago. [Reprinted from vol. xii, "Gynæcological Transactions."]

The Trituration of Alkaloids. By Edwin Pynchon, M. D., Chicago. [Reprinted from the "Western Medical Reporter."]

A Text-book of Biology: comprising Vegetable and Animal Morphology and Physiology. Designed more especially to meet the Requirements of the Intermediate Science and Preliminary Scientific Examinations of the London University. By J. R. Ainsworth Davis, B. A., Trinity College, Cambridge; Lecturer on Biology in the University College of Wales, Aberystwith. With Numerous Illustrations, Glossary, and Examination Questions. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xiii–462. [Price, $4.]

A Manual for Hospital Nurses and Others engaged in attending on the Sick. By Edward J. Domville, L. R. C. P. Lond., M. R. C. S. Eng., Surgeon to the Devon and Exeter Hospital, etc. Sixth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. iv–5 to 100. [Price, 75 cents.]

Ocular Symptoms in Diseases of the Spinal Cord. By William Oliver Moore, M. D., etc. [Read before the Section in Neurology, New York Academy of Medicine, March 9, 1888.]

An Improved Sphygmograph and its Work. By H. R. Hopkins, M. D., Physician to the Buffalo Hospital. [Reprinted from the "Medical Press of Western New York.")

Hygiene of Reflex Action. By Henry Ling Taylor, M. D., New York. [Reprinted from the "Journal of Nervous and Mental Disease."]

The Relations of Mind and Body. By H. R. Hopkins, M. D., Clinical Professor of Nervous Diseases, Medical Department, University of Buffalo. [Reprinted from the "Medical Press of Western New York."]

Water; its Impurities gathered from the Air and Earth. The Organisms that grow in it, and the Modern Methods of Purification. By C. W. Moore, M. D., San Francisco. [Reprinted from the "Pacific Record of Medicine and Surgery."]

Reports on the Progress of Medicine.

OBSTETRICS.

By ANDREW F. CURRIER, M. D.

Perforation or Cæsarean Section.—Wyder ("Ann. de gyn. et d'obst.," Jan., 1888, abstracted). The author's conclusions are: 1. Contracted pelves being divided into four categories, according to the degree of contraction, if a given case is of the third or fourth degree of contraction, the question of premature labor should be considered in addition to those of Cæsarean section and perforation, and the patient should be allowed to choose between the three. 2. In cases of contraction of the first and second degrees, Cæsarean section should be recommended to primiparæ only in extreme cases, and it should be recommended to multiparæ only in those cases in which previous labors have been accompanied with grave complications. On the other hand, due weight should be given to the earnest desire of a patient to give birth to a living child. If gestation is not too far advanced it is proper to propose to the patient the induction of premature labor. So long as statistics demonstrate for the mother a mortality by Cæsarean section which is double that of perforation or of induced labor it is not right to affirm that the first of these operations should be substituted in every case for perforation. According to Credé, the mortality for the mother by Cæsarean section is now considered as 17·5 per cent. According to the author, the mortality for the mother when perforation is practiced is 8·4 per cent., the mortality after induced premature labor 8·2 per cent.

The Treatment of Abortion.—Dahlmann ("Ctrlbl. f. Gyn.," Jan. 14, 1888). The author's paper is based upon personal experience in 130 cases. In regard to prophylaxis, if syphilis is the probable cause of several miscarriages in any given case, it is important, in addition to antisyphilitic treatment, to prevent conception until the disease has been brought under control. By following such a plan, syphilitic women have frequently been able to carry their children to term. Pregnant syphilitic women should be enjoined to remain in bed during the time that menstruation would ordinarily recur, on account of the increased blood-pressure in the pelvic organs at such periods. If there are indications that miscarriage is imminent, the patient should take her bed for at least eight days, avoid straining in urination and defecation, and take five drops of the tincture of opium every hour. If it is evident that miscarriage can not be prevented, and a digital examination shows that the ovum is still intact, it is recommended that the vagina be tamponed with six or eight pledgets of cotton, about as large as a walnut, to encourage the expulsion of the entire contents of the womb. If the ovum has ruptured, and the fœtus alone has been expelled, the author advises the immediate removal of the remaining products of conception. This can always be done by the index or middle finger, the womb being firmly pressed downward by the other hand. If any fragments still remain, they should be removed with the curette, and, to insure thoroughness, it is advisable that this latter procedure be always resorted to. An application of iodoform ointment to the interior of the womb should then be made. It is believed that the irrigation of the uterus and vagina with disinfecting fluids is only indicated in those cases in which there is evidence that decomposition of retained products of conception has taken place.

The Conduct of Labor in Occipito-posterior Positions.—Boislinière ("Ctrlbl. f. Gyn," Feb. 4, 1888). The third position of the head—that is, occiput posterior and to the right—is, next to the first vertical position, the most frequent, and therefore worthy of study. With the ordinary extension of the occiput forward, there will usually be a spontaneous ending of the labor, but the latter will be necessarily delayed, and greater contractile force of the uterus will be required. If the contractile force is weak, or the perinæum relaxed or torn, or the hollow of the sacrum shallow, rotation forward will not take place. If, moreover, there is decided projection of the spine of the ischium, or the child's head is large, the occiput will be extended backward. Such a projection of the spine of the ischium can be felt from the lateral vaginal walls, about two centimetres above the pelvic floor, and will serve as a useful factor for prognosis. In those cases in which the occiput is extended backward, it will be born first, and the chin last. If the child is small, the pelvis capacious, and the perinæum relaxed, a face presentation may result, in which case the chin will first appear under the arch of the pubes. If the labor is protracted, and there is no tendency to rotation forward, the forceps should be applied and extension of the occiput backward into the hollow of the sacrum effected before traction is begun. This rotation backward is to be preferred to the rotation forward which is recommended by some, because the decided extension of the neck of the child by the latter method is not without danger. The traction efforts should first be directed backward, so as to bring down the head to the inferior pelvic strait; then, for the first time, traction should be along a decidedly curved line, so as to draw the occiput over the posterior commissure, and then the forceps must be lowered toward the anus of the mother. By this method the vertex will pass the posterior commissure in the sub-occipito parietal diameter, and, in its final extension, in the trachelo-parietal diameter, both of these being without danger for the perinæum. If the latter should seem to be about to rupture, episiotomy should be practiced. Two fingers in the mother's anus will sometimes afford protection to the perinæum. Tarnier's forceps may also be used until the pelvic outlet is reached.

The Clinical Exploration of the Lower Segment of the Uterus before and after Labor.—Blanc ("Nouv. arch. d'obst. et de gyn.," January, 1888). The conclusions of this paper are: 1. The dilatation of the cervix does not follow any uniform law. Most frequently it occurs during the last fifteen days of pregnancy. Its cavity gradually participates in the enlargement of the uterine cavity, and its walls are merged in those of the primary inferior segment. 2. Less frequently, especially in primiparæ, the cervix remains intact until labor sets in. 3. Long before any modification of the cervix has taken place a particular segment—namely, the inferior uterine segment—has developed, which has for its distinct limits without the ring of contraction, and within the upper part of the cervix, or rather the anatomical internal orifice. 4. It is only at a later epoch that the cervix will share in the enlargement of the uterine cavity, forming, in the cases in which it occurs, a secondary inferior segment, which is separated from the primary inferior segment by the definite adhesion of the membranes. The first pertains to the cervix, the second to the uterus. From a clinical point of view the inferior segment of the uterus must be considered a feature in the development of the uterus, which has no analogue in the organ in an unimpregnated state. It develops between the body and the cervix, probably at the expense of a portion of the muscular bundles which form the base of the neck. From the development and migration of these bundles into the layers of the body of the uterus the inferior segment is formed, and this will continue to enlarge with the development of the fœtus. The upper part of the cervix may, within certain limits and at an advanced period of pregnancy, contribute to the formation and the extension of this zone. The annular accumulation which has become merged in the walls of the uterus will continue its development upward until it is fixed in the peritonæum, that being its location when parturition occurs. Therefore, Bandl, when he speaks of a muscular displacement of the cervix toward the inferior segment, and Bayer, when he speaks of an unrolling of its supravaginal portion, say nothing which is not conformed to clinical facts. The ring of contraction during the first days of the puerperium plays the same rôle which devolves at a later period upon the anatomical os internum. It closes the cavity of the uterus; intermittently, it is true, but it allows the flowing out of the accumulated lochial discharges, and the anteflexion of the uterus insures and completes the protective rôle.

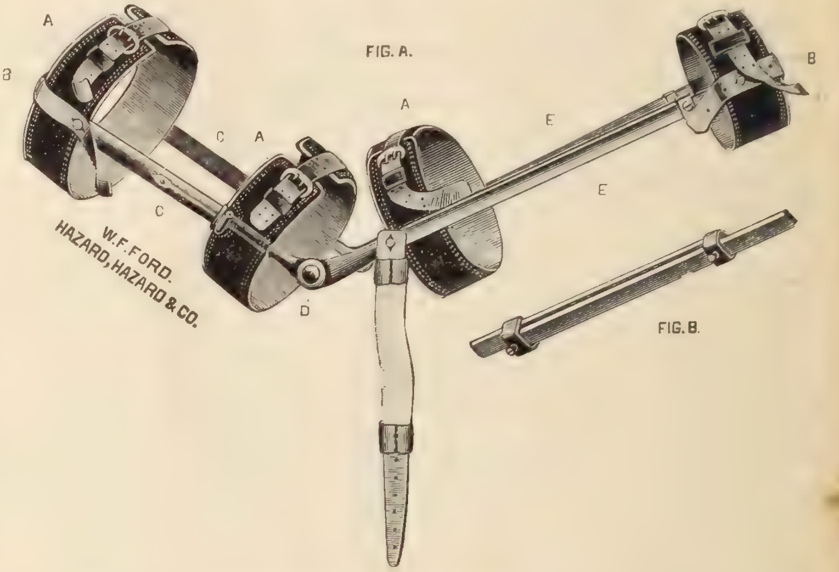
Mitral Stenosis and the Third Stage of Labor.—Berry Hart ("Edinburgh Med. Jour.," Feb., 1888). One of the most serious conditions in obstetrics is that which depends upon the co-existence of mitral stenosis with pregnancy. The condition of pregnancy tends to develop with rapidity an already existing cardiac lesion, and if the patient survives the third stage of labor she may, notwithstanding, succumb quickly to cardiac and pulmonary complications. This subject has been exhaustively treated by Angus Macdonald in his work "Chronic Heart Disease in Pregnancy and Parturition." The serious character of the lesion may be understood in the fact that of eight cases recently seen by Hart, seven were fatal. Three cases are narrated, two of them at length. In the first case abortion at the fourth month occurred, after a slight injury. Heart failure began about seven hours before death. At the autopsy the right side of the heart was found engorged and the lungs œdematous. There was mitral stenosis and ulceration of recent origin on the aortic cusps. In the second case labor at term was completed and was followed, a few hours later, by pulmonary œdema and death. In the third case labor at term was complicated by a justo-minor pelvis and prolapse of the funis. The forceps was applied while the head was yet above the brim, and a small still-born child was delivered. The labor occupied five hours and a half, and, though the heart lesion was recognized and the patient was suffering from dyspnœa, chloroform was administered. The placenta was extracted ten minutes after the birth of the child, and little blood was lost. Gradual improvement in the mother's condition began immediately after delivery, but the flagging heart required constant stimulation by means of heat, alcohol, and tincture of strophanthus. The latter is believed to be especially indicated in cases in which stimulation of the heart solely or mainly is required. The difficulty in these cases is believed to be due to the overloading of the circulation, more especially the right heart and the lungs, by means of a portion of the blood which circulated in the placenta and the fœtus previous to parturition. The right heart has already become greatly enfeebled by the development of mitral stenosis during pregnancy and is unable to bear the additional strain; hence the frequent occurrence of fatal pulmonary œdema after labor has been completed. Should free hæmorrhage occur, it is to be looked upon as salutary rather than harmful. Concerning the question of treatment of women with mitral stenosis, marriage is to be discountenanced; but if marriage has been consummated and pregnancy has occurred, the patient should be kept at rest as much as possible, and tincture of strophanthus given as soon as circulatory disturbance begins. Chloroform should be given during labor as in uncomplicated cases. During and subsequent to the third stage the following rules are recommended: 1. No ergot should be given. 2. Free hæmorrhage should excite no alarm. 3. If the circulation becomes embarrassed, as shown by irregular heart action or dyspnœa, increased quantities of strophanthus should be given and the præcordial region dry-cupped. If this does not give relief, venesection upon the arm should be performed. 4. Particular caution should be observed if the hæmorrhage is scanty. 5. Even if all seems well, the patient must be constantly watched during the first day.

New Inventions, etc.

AN APPARATUS FOR MAINTAINING CONTINUOUS EXTENSION OF THE ELBOW JOINT IN ALL POSITIONS OF THE FOREARM.

By Joseph D. Bryant, M. D.

The accompanying cut illustrates an apparatus which was exhibited at the May 8th meeting of the New York Surgical Society (see page 609). It consists of two jointed parallel bars, connected with each other by four leather bands (Fig. A), two of which are attached to the bars of the forearm, and the remaining two to those of the arm, A A. The joint of the bars, D, is placed exactly in a line with the elbow joint, in which position it is kept at all times. The side-bars of the arm portion of the instrument, C C, are composed of two parts, so arranged by means of a ratchet and key that they can be lengthened or shortened at pleasure. The purpose of this arrangement is to overcome the result of the slipping of the instrument upward by increasing the length of this portion of it. By this arrangement the joint of the instrument and the elbow joint can be kept in an exact line with each other. The active mechanism of the instrument is in the forearm portion. Each side-bar of this portion, E E, is composed of two parallel bars (Fig. B), so arranged as to slide on each other. The outer bar only is movable. It follows, therefore, that, if elastic traction is used to connect the two bars with each other, it will cause elongation of the side-bar of the instrument. The instrument is confined in position while not extended by adhesive strips attached to the skin, and passed over the upper and lower bands respectively and confined in place. Leather straps can be fastened to the strips at the outer and inner surfaces of the limb, and be caused to turn over the same bands and be fastened to outstanding screw-heads, B (Fig. A). To the screw-heads noticed at the outer side of the compound bar (Fig. B) can be fastened the elastic webbing seen hanging from the side-bar in Fig. A. When thus fastened, elongation of the instrument, and consequent extension of the forearm, will take place. The instrument should be applied cautiously, so as not to constrict the circulation. The portion of the limb between the bands next the elbow joint should be bandaged properly to obviate a tendency to swelling of the limb in this situation.



Miscellany.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 1st:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending May 12th corresponded to an annual rate of 17·6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Cardiff, viz., 12·5, and the highest in Bolton, viz., 26·7 in a thousand. Small-pox caused 3 deaths in Sheffield, 1 in Manchester, 1 in Preston, and 1 in Leeds.

London.—One thousand three hundred and sixty deaths were registered during the week, including measles, 22; scarlet fever, 19; diphtheria, 15; whooping-cough, 52; enteric fever, 9; diarrhœa and dysentery, 14. The deaths from all causes corresponded to an annual rate of 16·6 in a thousand. Diseases of the respiratory organs caused 260 deaths; different forms of violence, 51; and 12 suicides were registered. In greater London 1,710 deaths were registered, corresponding to an annual rate of 16·1 in a thousand of the population. In the "outer ring" 16 deaths from whooping-cough were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending May 12th in the sixteen principal town districts of Ireland was 22·9 in a thousand of the population. The lowest rate was recorded in Dundalk, viz., 0, and the highest in Lisburn, viz., 38·7 in a thousand. In Dublin 156 deaths were registered, including 9 from whooping-cough; enteric fever, 1; measles, 1; scarlet fever, 4; typhus, 1; and dysentery, 1.

During the quarter ending March 31, 1888, there were 27,252 deaths registered, corresponding to an annual rate of 22·8 in a thousand, including small-pox, 3; measles, 805; scarlatina, 257; typhus fever, 105; whooping-cough, 421; diphtheria, 138; simple continued fever and ill-defined forms of fever, 96; enteric fever, 154; diarrhœa, 290; simple cholera, 3; hydrophobia, 5.

Scotland.—The deaths registered in eight principal towns during the week ending May 12th corresponded to an annual rate of 21·1 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 14·7, and the highest in Glasgow, viz., 24·3 in a thousand. The aggregate number of deaths registered from all causes was 534, including 11 from measles; scarlet fever, 3; diphtheria, 1; whooping-cough, 19; fever, 3; and diarrhœa, 3.

Two thousand eight hundred and twenty-four deaths were registered during the quarter ending March 31, 1888, corresponding to an annual death-rate of 20·8 in a thousand.

Honolulu, Hawaiian Islands.—The United States consul, in his dispatch dated April 28, 1888, relative to the interest that is now manifested throughout the world in the disease of leprosy, and the controversy as to its contagious character, states that "in the case of Keame, who was condemned to death for murder, but had his sentence commuted to imprisonment for life upon his agreement to allow himself to be inoculated with leprosy, that the disease has finally made its appearance after a period of two years and a half since the inoculation, which has resulted in a general infection of his system with leprous virus. A very remote chance of his having previously had germs of the disease in his system may exist. This, in the opinion of Dr. Arthur Mowritz, physician in charge of the leper island where the unfortunates are segregated, is possible, but not probable, although Hawaii has been an endemic leprosy focus for the past century."

Buenos Ayres.—Nine hundred and seventy-seven deaths were registered during the month of February, 1888, including small-pox, 70; enteric fever, 39; scarlet fever, 3; and diphtheria, 51.

Palermo, Italy.—The United States consul, in his dispatch dated May 9, 1888, relative to his reports on cholera of last year, states: "I am of opinion that the disease has again manifested itself in this city. This opinion is based on the large number of deaths in proportion to the total thereof, which occurred in this city during the last week from 'intestinal catarrh,' a term almost synonymous with cholera in Palermo, in view of the initial cases of that disease being thus designated by the authorities (in order to prevent a panic) in recent epidemics, as well as upon the fact that the messenger to the consulate was attacked last night by so-called intestinal catarrh, and is now confined to his bed."

Rome, Italy.—The United States consul-general, in his dispatch dated May 4, 1888, states that "there exists a great deal of misapprehension in regard to the health of Rome as compared with other cities. By many persons Rome is supposed to be almost uninhabitable in summer, and they believe that a very dangerous disease, known as 'Roman fever,' prevails in Rome at all times of the year. No such disease is known to medical men in Rome, or is mentioned in any medical work. There is a certain amount of malarial and typhoid fever in Rome, but the so-called Roman fever is purely imaginary. Undoubtedly Rome has greatly improved in regard to its sanitary conditions since the establishment of the present government. The whole drainage system, which in former days was very bad, has been remodeled, and the city is now thoroughly drained. Large tracts of vacant land within the walls have been closely built over, and malaria, which formerly existed in those tracts, has since disappeared. The closing of all the wells in the city has done much to decrease zymotic diseases, and the enforcement of wise sanitary regulations has greatly lessened the death-rate. Outside of Rome, in the Campagna, the malaria in summer and autumn is very dangerous. While it does not extend within the walls, it produces a great deal of illness among the peasants, especially during the harvest season, when troops of men and women come down from the mountains and live night and day in the Campagna until the harvest is over. When these people fall ill of malarial fever they are brought to the Roman hospitals, and in case of death they contribute to swell the death-rate of the city. . . . The large increase of the death-rate in the month of September, 1887, was not normal, but was due to the presence in Rome of the cholera at that time. There were some 200 to 250 deaths of cholera here in the late summer and early autumn of 1887."

Havana.—The sanitary inspector reports 3 deaths from yellow fever and 7 from small-pox during the week ending May 19, 1888.

SANTIAGO DE CUBA, *May 19, 1888.*

No yellow fever has appeared this week at the military hospital. The town is also free from it.

Marseilles.—Nine hundred and twenty-one deaths were registered during the month of April, 1888, including small-pox, 10; enteric fever, 20; scarlet fever, 6; diphtheria and croup, 43; and measles, 54.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	May 12.	2,260,945	1,027	..	....	6	....	10	4	50
Glasgow	May 12.	545,678	246	..	....	...	....	....	1	1
Warsaw.........	May 5.	444,814	210	..	....	5	....	....	1	8
Calcutta	April 14.	433,219	232	59	....	..	....	....	....	2
Amsterdam	May 12.	389,916	166	..	....	....	....	....	....	....
Copenhagen.....	May 8.	300,000	105	..	....	....	....	....	1	3
Edinburgh. .. .	May 5.	262,733	106	..	....	....	....	...	....	1
Edinburgh......	May 12.	262,733	107	..	....	....	....	1	....	....
Palermo	May 12.	250,000	77	..	....	....	....	....	1	2
Belfast..........	May 5.	227,022	126	..	....	....	....	1	1	1
Belfast..........	May 12.	227,022	109	.	....	....	....	2	1	2
Genoa	May 12.	179,513	89	..	....	4	1	....	....	....
Leipsic..........	May 12.	170,000	70	..	....	....	....	....	1	1
Trieste..........	May 5.	154,500	95	..	....	2	....	....	....	1
Stuttgart........	May 12.	125,510	40	..	....	....	....	....	....	1
Bremen.........	May 5.	122,000	55	..	....	....	....	....	1	....
Havre	May 12.	112,074	65	..	....	6	....	1	....	....
Pernambuco	April 14.	110,000	79	..	1	....	....	....	....	....
Barmen.........	May 5.	109,000	38	..	....	....	1	....	....	....
Barmen.........	May 12.	109,000	45	..	....	....	....	....	....	....
Reims	May 12.	97,093	72	..	....	....	....	....	....	2
Mayence	May 5.	65,802	37	..	....	....	....	....	....	....
Cadiz	May 5.	65,028	49	..	....	....	....	....	....	....
Cadiz	May 12.	65,028	38	..	....	....	....	....	....	....
Merida, Yucatan	May 6.	48,800	47	..	....	....	....	3	....	....
Merida, Yucatan	May 13.	48,800	......	..	....	....	....	1	....	....
Cienfuegos	May 14.	40,753	11	..	...	1	....	....	....	....
Curaçoa	May 12.	25,000	5	..	....	....	....	....	....	....
Vera Cruz	May 17.	23,800	21	..	....	....	....	....	....	....
Gibraltar	May 6.	23,630	6	..	....	....	....	....	....	....
Sagua la Grande.	May 5.	15,605	9	..	....	1	...	....	....	....
Sagua la Grande.	May 12.	15,605	7	..	...	1	....	....	....	....
Matamoras......	May 12.	12,000	14	..	....	....	....	....	....	....
Matamoras......	May 19.	12,000	11	..	....	....	....	....	....	....
Laguayra	May 5.	7,428	6	..	....	....	....	....	....	....
Laguayra	May 12.	7,428	12	..	....	....	....	....	....	....

UNITED STATES.

The following letter has been received from Dr. J. P. Wall, president of the Board of Health, Tampa, Fla., under date of the 23d instant:

"The Plant steamers from Havana landed at Port Tampa for the first time on the 13th instant. . . . The disinfection is done on board of steamer for the present, as in previous years. I am, however, having a fumigation-chamber and other disinfecting apparatus fixed up on the wharf at Port Tampa, which is about one mile from shore. The incomplete condition of the wharf prevented my having this done earlier, before the steamer began to make that the place of transfer. I think that before the 1st proximo everything will be in working order. As you know, it is the company's policy to prevent the steamers from becoming infected, and, although every pains will be taken here as to the disinfection of baggage, the rules and regulations of the company as to not allowing unacclimated persons to take passage will be still enforced as in the two previous years. I went out to Plant City yesterday, in company with Dr. Jerome Cochran, of Alabama. The place is healthy, and there had not been any case of fever there since week before last. I had the place thoroughly disinfected, burning all beds and mattresses in houses where sickness had been, and otherwise disinfecting houses and premises. I think the fever has been stamped out, though we will not allow people to return there before week after next, keeping up a vigilant observation and resorting to aeration as much as possible in the mean time."

Additional rules and regulations for Tampa Bay and the Gulf coast of Hillsborough County have been adopted and promulgated by the Board of Health of Hillsborough County, locating the quarantine grounds in Old Tampa Bay. The following is an extract from said rules and regulations:

Rule 2. A yellow flag will be displayed at or near the station, where all boats and vessels, except those of regular established lines making regular periodic trips, will stop until visited by the quarantine physician or inspector, and the sanitary condition of the vessel and the health of the crew and passengers, as well as that of the city and port from which the vessel hails, are fully inquired into, when, if everything in connection with the vessel and hailing port is found satisfactory, *pratique* shall be granted, and the vessel can proceed to Port Tampa or other place within the county to land passengers and discharge cargo. Otherwise, the vessel shall be ordered into quarantine, subject to the further orders or disposition of the Board of Health—either to be ordered to the nearest United States quarantine station or to be subjected to such detention and processes of disinfection as the Board of Health may order and direct, under the supervision of the quarantine physician.

. . . .

Rule 4. All vessels or boats arriving in the waters of Hillsborough County from the high seas shall, if ordered into quarantine, proceed to the quarantine station near Port Tampa, in Old Tampa Bay; and all vessels or boats from any port or city, foreign or domestic, where infectious or contagious diseases are prevailing, shall be ordered into quarantine and undergo inspection before being allowed to land passengers and freight or hold any communication with the shore.

Rule 5. The quarantine rules and regulations adopted by the Board of Health for the port of the city of Tampa are hereby declared to be in full force and effect, so far as applicable, to all vessels from the high sea arriving in the waters of Hillsborough County.

Rule 6. The Board of Health shall appoint a quarantine physician and a quarantine inspector, the latter to remain permanently at the quarantine station during the season of quarantine, and pay such physician and inspector such salaries, respectively, as may be mutually agreed upon. The inspector shall be under the control and orders of the physician.

Memphis, Tenn.—The two cases of small-pox reported in the last abstract, passed through the first week of the disease before they were discovered by the health officer and isolated in the pest-house; but no new cases have since been reported.

The New Hampshire Medical Society will hold its ninety-eighth annual meeting at Concord on Tuesday, the 19th inst. The following papers are included in the programme: "Auto-Infection," by Dr. J. J. Berry, of Portsmouth, the discussion to be opened by Dr. J. W. Parsons, of Portsmouth; "Report on Surgery," by Dr. F. A. Stillings, of Concord, the discussion to be opened by Dr. M. W. Russell, of Concord; "Influences of Alcoholism on Surgical Injuries; Treatment, etc.," by Dr. D. S. Adams, of Manchester, the discussion to be opened by Dr. William Child, of New Hampton; "Milk," by Dr. Frank Blaisdell, of Goffstown, the discussion to be opened by Dr. I. A. Watson, of Concord; "Extent and Distribution of Consumption in New Hampshire," by Dr. I. A. Watson, of Concord, the discussion to be opened by Dr. Thomas Hiland, of Concord; "How are Drugs Medicinal?" by Dr. M. C. Lathrop, of Dover, the discussion to be opened by Dr. G. H. Sanborn, of Henniker; "Medicine *versus* Nature," by Dr. P. A. Stackpole, of Dover, the discussion to be opened by Dr. L. G. Hill, of Dover; "Report on Necrology," by Dr. John J. Berry, of Portsmouth. The councilors' meeting will be held on Monday, the 18th inst. The president, Dr. S. W. Roberts, of Wakefield, will deliver his annual address at noon on Tuesday.

ANSWERS TO CORRESPONDENTS.

No. 190.—No.

No. 191.—Congo paper is made by impregnating bibulous paper with a solution of 1 part of Congo red in 7,500 parts of alcohol and 2,500 parts of distilled water. It is turned blue by acids. Congo red is a patented dye said to be prepared from tetrazodiphenyl chloride and naphthionic acid. Titration is volumetric analysis. To titrate is to test by means of standard solutions. We have never met with the word "titarmetric"; perhaps you have encountered it as a misprint for titrimetric, meaning volumetric.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ON THE ADVANTAGES OF PLASTER-OF-PARIS DRESSINGS AS A MEANS OF SPINAL SUPPORT.*

By LEWIS A. SAYRE, M. D.

Since the days of Percival Pott, who first accurately described the correct pathology of caries of the spine in 1783, and who so strongly recommended the horizontal position to be constantly assumed during the entire existence of the disease—because by this position the diseased portion would be relieved from the pressure caused by the weight of the upper portion of the body on the diseased surfaces—I believe that there has been an entire consensus of opinion among the profession in all countries as to the correctness of this opinion of relieving the diseased parts from undue pressure as one of the most essential elements of successful treatment in this unfortunate malady.

We all know that undue *pressure* upon any part interferes with its normal circulation by cutting off a portion of its blood-supply, and thus diminishing its vitality and increasing its tendencies to disintegration—such as caries, sloughing, and other necrotic changes—the result of *malnutrition*, simply from this obstruction to its proper nutritive supply.

As I have before stated, the entire profession recognized the advantage of the *horizontal* posture, as diminishing this amount of pressure by taking off the superincumbent weight of the head and shoulders, which would have to be borne by the parts when the body was in the erect position.

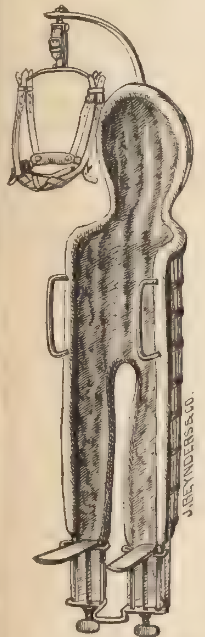


Fig. 1.

But there is another element of pressure, even when the body is in the horizontal position, and which tends to increase this absorption and disintegration, and which has been entirely overlooked by the profession. I mean the pressure caused by muscular contraction from reflex irritation, even when the body is in the horizontal posture, and it therefore requires *traction*, or extension and counter-extension, to overcome its ill effects, even when the patient has had the benefits of the horizontal position.

For this reason I have for some years past put all my smaller children, whose pelves were not sufficiently developed to apply the plaster jacket and jury-mast (to which I will refer hereafter), in the wire cuirass, with head extension, as in Fig. 1. In this cuirass, with the head extension, they can be stood up against the wall and look out of the window for hours, and thus amuse themselves, or be taken to the park to drive, or transported any distance in a railroad car, without the slightest inconvenience or discomfort, as seen in Fig. 2 and Fig. 3. In adults who are paralyzed and are too large to carry in the cuirass, I make the traction from the head and heels by weight and pulley attachments.

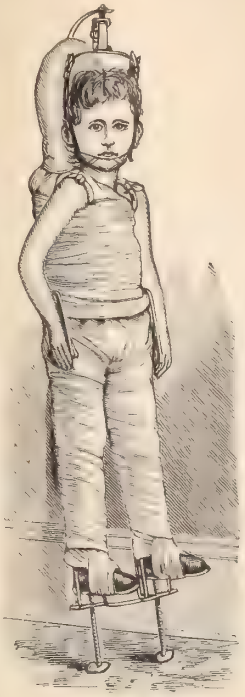


Fig. 2.

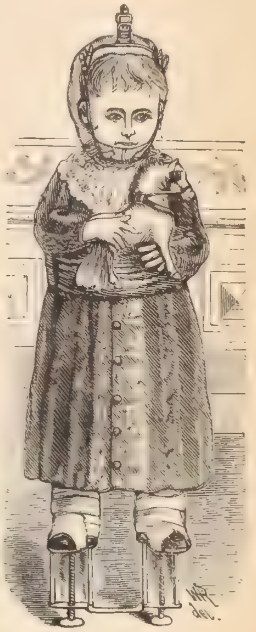


Fig. 3.

This horizontal posture, while it was of the greatest advantage to the local parts involved in the disease, was still a great detriment to the general health of the patient by the *in-door* confinement of the adult, and by limiting the muscular movements of the child when confined in the cuirass. It was to obviate this difficulty, and allow the patients the advantage of out-door exercise, that various surgeons in different parts of the world have invented and used different kinds of support to the spinal column, to prevent the deformity from increasing while the patients assumed the erect posture and had the advantage of free exercise in the open air.

To attempt a description of all these various braces would be a useless waste of time, as their number is legion, and, with the exception of Taylor's, Banning's, and Allen's, most of them are of no practical good, many of them, in fact, being absolutely injurious, not only increasing the disease and deformity, but at the same time giving the patient great physical agony, and sometimes even absolute torture.

The spinal support of Taylor, which is altogether the best of any of the iron braces, and that of Banning and of Allen, are based upon the principle of removing the *pressure* from the *anterior* portion of the bodies of the vertebræ (which are spongy in texture and easily absorbed) by bending the body directly backward, using the "bos" as a fulcrum, and thus transferring the weight to the transverse processes, which are of a different textural composition from the *bodies* of the vertebræ, and not so liable to undergo interstitial absorption under the influence of additional pressure. Taylor's and Allen's braces are of great service in the treatment of Pott's disease, inasmuch as they prevent an increase of the posterior angular projection by removing the pressure from the *anterior* portions of the bodies of the vertebræ; but they do not give the same amount of benefit as the plaster-of-Paris jacket (hereafter to be described), which removes the pressure from *all parts* of the vertebræ, *posteriorly* as well as *anteriorly*, when properly applied.

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* Read before the Orthopædic Section of the New York Academy of Medicine, May 18, 1888.

The principal objection, however, to both of these spinal supports is their mode of attachment. In order to be kept in position they have to be secured by a bandage around the body, called the apron, which has to be laced or buckled sufficiently tight to retain the spinal supports in a positively *fixed* position, and if they are not thus securely retained, they excite friction and chafing by their motion, and if the body apron is buckled or laced sufficiently tight to retain this exact position, it necessarily girdles the body to such an extent as to very materially prevent the full expansion of the chest, thus diminishing full inspiration; and to this extent at least they are injurious, as preventing proper oxygenation of the blood.

Banning's brace is superior to either of the others in its mode of attachment by elastic springs and the absence of the body belt, thus allowing of free expansion of the chest; but it is so very elastic and insecure as to afford but very little if any support in a case of spondylitis or Pott's disease, whatever benefit it may render in a case of lateral curvature.

The Knight brace or crib, formerly used in the Forty-second Street Hospital for the Ruptured and Crippled, has all the objectionable features of the Taylor and Allen spinal supporters, without one single redeeming quality.

I have tested the respiratory capacity of a very large number of patients (certainly over one hundred) with this spirometer, who were wearing at the time some one or the other of the braces above referred to, and in no single instance could they expire as much with the Taylor, Allen, or Knight brace upon them as when it was removed. And in every single instance where a plaster-of-Paris jacket was applied to the same patient the expiration was increased without one single exception, in some cases this increase amounting to ten, twelve, fifteen, and even twenty cubic inches.

In the Banning brace this difference in respiration was nothing like so marked, although it held the spinal column less securely than the Taylor or the Allen brace.

In the autumn of 1874 a poor child was sent to me from Chatham Center, Putnam County, paralyzed in the lower extremities for some weeks before from Pott's disease of the lower dorsal and first lumbar vertebræ of three years' standing, the eleventh and twelfth dorsal spines being very prominent, with a very sharp angle at the eleventh spinous process. The child was carried by the father, being unable to stand even when held by the hands. He had the projecting sternum, the peculiar catching, grunting respiration, with the well-marked features in countenance and expression, of spondylitis or Pott's disease in its far-advanced stage. As the child could not stand erect while Mr. Reynders measured him for a Taylor brace (which was the instrument I used at that time in all my cases of Pott's disease), and as I always preferred the measurement by the flexible lead tape to be made to the spine when in the erect position, rather than in the horizontal posture, I requested my son to hold the boy up by the arms while Mr. Reynders made his measurements and applied his leaden tape to the exact curvatures of the spinous processes. As my son lifted the child from the floor I was struck with the marked change that took place in the curves of the spine, which became apparently much straighter and the body more elongated, and the child immediately moved his feet, which he could not do before. He was then placed on his feet again, but, not being able to stand, was seated on the sofa, and as soon as my son let go of his hands his body dropped forward and folded together as before, with an immediate return of the peculiar grunting, catching respiration which was so conspicuous in his case, and which entirely disappeared every time that he was suspended by the arms.

As they were compelled to leave in the next train, and I had no time to apply my usual "turtle-shell,"* which takes some hours to complete, and as Dr. Yale, my assistant, was just completing the application of a plaster-of-Paris bandage to a child's club-foot, I told him to apply the same to this child's body, as we could do it more quickly than we could apply a "turtle-shell," while, if there should be any danger from respiration, we could easily divide it down the front, my object being merely to give the child some kind of support until Mr. Reynders could make the brace, and at the same time to protect the child from the danger of jar in traveling.

My son stood on the sofa and held the child up by the hands, Mr. Reynders had him by the feet, and I pulled his red flannel shirt down so tightly that it fitted almost like his skin, and Dr. L. M. Yale applied the plaster bandages very rapidly around his entire trunk, commencing at the waist, going down to the pelvis, and reversing, going up to the top of the sternum and back several times, until we thought it was sufficiently thick to sustain him.

At first I was much alarmed about his breathing, but as he hallooed quite loudly my fears were soon dispelled.

We then laid him on his stomach on the sofa to dry while we went to lunch; on our return to the office, you can imagine our surprise to find him standing at the window looking out into the street, the mother stating that he had got off the sofa and walked there a few moments before without any assistance, a thing he had not done before for many months. The child seemed to be perfectly comfortable, but I was afraid to leave his entire thorax in this inelastic casing, and I therefore slipped a paper-knife beneath his shirt and cut both shirt and plaster casing from sternum to pubes. I then secured the pelvic portion by a few turns of a roller bandage and left the upper part gaping open, instructing the mother to secure it by tying three elastic straps on either side, which were cut from her rubber garters, and directed the parents to bring the child on the following week to apply the Taylor brace. The present arrangement was a mere temporary expedient, without the slightest intention of making it a permanent plan of treatment.

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* For some years before this, in cases of persons too poor to pay for a Taylor brace, I had been in the habit of applying as a spinal support what I called a "turtle-shell" of plaster of Paris. This was done by placing the child on the stomach and pulling the shirt down smooth, so as to have no wrinkles in it; a piece of flannel or any cloth of loose texture, like cheese-cloth, or an old towel, was cut so as to fit the back from the neck to the buttocks, and to extend two thirds around the body, nicking it at the waist and other places where it might be necessary to make the adjustment accurate. Several of these were cut after the same pattern, and then dipped in a mixture of plaster of Paris and saturated with the plaster.

Two assistants then gently extended the child by making traction by the arms and legs, and after the shirt had been pulled down smoothly, then plastered cloths were placed in position on the child's back and around his body, and a dry cloth or blanket of the same pattern was placed over them, and all these were secured in position by a nicely adjusted roller bandage around the whole body; the child was to be kept lying on the stomach until the plaster had hardened or become "set," after which the mother could roll the child on his back and accurately fit a piece of elastic webbing to the open space in front, which, being laced in the center, would accurately retain the plaster shell in its proper position on the back, and give the child a much more secure support and infinitely more comfort than any of the "Knight cribs" for which I had so frequently used it as a substitute.

Mr. Reynders brought the Taylor brace the following week, as by agreement; but the child made no appearance, and, as I did not know the name or address of the people, I lost sight of them until March, 1875—nearly four months after their first visit. In the mean time, as I had given up all expectations of ever seeing the child again, I had given the brace to another child that it happened to fit.

In March, 1875, they came to my office just as I was leaving for my clinical lecture at Bellevue, and I took them in my carriage to the hospital and described the history of the case, as here narrated, to the class.

The mother stated that the reason she had not returned according to her promise was because the child had been so perfectly comfortable all winter, running around the house the same as the other children, and she only came now because he had been bleeding from his belly for the last few days, and some of her friends had told her he had a cancer coming on his belly, although he seemed to be perfectly well. The child had grown quite stout, and was looking the picture of perfect health, walking around the room quite firmly.

On removing his clothes, I found the front of his plaster jacket all stained with blood. The bandage securing it around the pelvis was exactly as I had put it on four months before, except that it was exceedingly filthy. From about two inches below the umbilicus to the top of the jacket it gaped open, quite widely at the top, and was held together by the elastic ties the mother had sewed on.

At the umbilicus there was a mass of very red exuberant granulations, which bled quite profusely and which had been oozing blood for some days, and it was for this reason that she had returned.

On removing the bandage around the pelvis, for the purpose of taking off the jacket, the source of trouble was readily discovered. In cutting through the shirt and plaster the day that I put it on I had left a *single thread undivided* just on the umbilicus, and, as the child grew and the upper part expanded, this thread irritated the umbilicus, causing a warty growth, which was very hæmorrhagic. I snipped it off with a pair of scissors and touched the base with nitrate of silver, and that was the end of it. I then scolded the woman for neglect, and told her to go to Mr. Reynders and be measured for a new brace, as I had given her other one away, and to return the next week without fail, as I wished to show the class how to apply a Taylor brace. I then reapplied his dirty jacket, and as soon as I had finished the bandaging the mother said, "Now, sir, he can stand again." I asked her if he could not stand when I had it off, and she said, "No, sir." I had not noticed that fact, and therefore immediately removed the bandage and took off the plaster-cast, and sure enough the woman was right; the child immediately staggered on his legs, put out his hands to seize something to keep from falling, and could not or would not lift either foot from the ground. My assistant held the child up by the arms and I readjusted the jacket, and immediately he walked as before. This was to me a revelation, and I then and there prophesied that this was probably destined to be the future plan of treatment of Pott's disease. Dr. George, who was then a medical student and most excellent short-hand reporter, published this lecture in the "Philadelphia Medical Times" for April 10, 1875. I told the woman not to go to Reynders for a Taylor brace, but to wash the child clean, get it a closely fitting shirt, and bring it to my next lecture, and I would apply a proper plaster-of-Paris jacket to him.

This was done on the following Wednesday at my clinic, and was the first public exhibition of this plan of treatment. I next made a public demonstration of the treatment at the meeting of the American Medical Association in Louisville, Ky., in May, 1875. At the meeting of the American Medical Association in Philadelphia in 1876 I made a practical demonstration of the application of the plaster-of-Paris jacket in a case of Pott's disease. Dr. Alfred C. Post then remarked that "this method of treatment marked an era in the history of medicine," and moved a vote of thanks to me, which was carried without a dissenting voice.

In 1877 I made public demonstrations in Guy's Hospital, St. Thomas's, University College Hospital, and St. Bartholomew's, in London; Birmingham Infirmary, and twice before the British Medical Association at Manchester, the second lecture being in response to a unanimous request from the association, upon a motion made by Mr. Lund and seconded by Mr. Ernest Hart, secretary of the association, asking me to make the second demonstration. At this last lecture the room was insufficient to accommodate the audience, and they adjourned to the largest hall in the university, which was soon crowded to its utmost capacity, and for the ovation that followed the demonstrations I must refer you to the medical journals of that date both in England and in this country. In Liverpool, Cork, Dublin, and Belfast, at the different meetings of the British Medical Association, at the meeting of the International Medical Congress at Amsterdam (1881), and also at Copenhagen (1884), I made public demonstrations of the plan of treatment, and received a unanimous vote of thanks in each instance, and an indorsement of its superiority over any other plan yet devised.

This is not the time or place to describe my method of applying the plaster of Paris as a spinal support, as that has already been so fully done in my published works. But some substitutes have been offered to take its place, such as silicate of sodium, the porous felt, leather, etc. The objection to the first is its want of porosity and difficulty of removal. The felt splint is also impervious to the air, on account of the gum that is in it, and it has not sufficient firmness to retain its form unless sustained by iron supports, and can not be constructed in any part of the country by the ordinary physician independent of the instrument-maker, as the plaster-of-Paris jacket can.

The same objections apply to the rawhide of Darrach, the leather jacket of Bartow, and the wire corset of Roberts. They can not be made except by the skilled mechanic, and can not be compared to the plaster jacket for comfort and utility, even when made by the most accomplished instrument-maker.

Mr. Davy, of London, has also made some modifications in my mode of applying the plaster-of-Paris jacket by laying the patient in a hammock, instead of partially suspending him, as I always do. The objection to this mode is that the body is bent too much in a backward curve, and also that the thorax is more compressed when the child is lying on its stomach than when it is partially suspended, according to my plan, which necessarily expands the thorax to its fullest capacity, and this capacity of thoracic expansion I look upon as of most vital importance, and, in fact, the restriction of this thoracic expansion is one of the principal objections to some, if not most, of the other spinal supporters. It is true that Mr. Davy has now modified his plan somewhat by cutting a hole in the hammock to let the head fall through, and another for the feet, and then by having extension made by two assistants while the plaster bandages are being applied. But, as the child is lying with its face toward the floor you can not see the effect of your traction on its countenance, and therefore may apply it too strongly or not strongly enough; and, as the child is often too young to talk, you can only be governed in your amount of traction by the effect produced in its countenance by the expression of either pain or pleasure.

When applied as I suggest, the gradual traction can be continued until you reach the point of greatest comfort, which is easily recognized by the child's expression, and can then be securely retained until the plaster is accurately adjusted, when the retention in this position of perfect comfort will be permanent.

The various substitutes that have been suggested to take the place of plaster of Paris—such as silicate of sodium, shellac, porous felt, gutta-percha, etc.—are all objectionable on account of their want of porosity, and therefore being impermeable to the air, whereas the plaster jacket is perfectly permeable to the air, as is seen in this experiment: by blowing the smoke into this tight plaster-of-Paris box, you see it emerging from *all* its parts, thus proving its porosity, which is of such vital importance in retaining the skin in a healthy condition and not interfering with the insensible perspiration, which is a point of vast importance. In cases of rotary lateral curvature, where the deformity has been allowed to progress to the point of requiring artificial support, there is no substitute that can be applied that will so well retain the body in the improved position which partial self-suspension gives it, and which can be worn with so much comfort to the patient as the plaster-of-Paris corset.

Conclusions.—That the plaster-of-Paris jacket and jury-mast in cases of spondylitis or Pott's disease, and that the plaster-of-Paris corset in cases of rotary lateral curvature, are altogether superior to any other instruments yet devised for the relief of these infirmities, and for the following reasons:

1. They can be applied in any place and by any competent physician with perfect success, without the intervention or aid of any instrument-maker. This to the country practitioner is a point of most vital importance.

2. They can be worn with perfect ease and comfort to the patient in all cases where they can be properly applied.

3. The plaster-of-Paris jacket and jury-mast retains the spinal column in a more quiescent condition, and relieves the inflamed parts from the pressure of the superincumbent head and shoulders in cases of spondylitis better than any other device heretofore employed.

4. That, being applied while the hands are over the head and the body partially suspended, the thoracic cavity is expanded to its utmost capacity, thereby increasing the ability for full inspiration better than can be done by any instrument which is retained in position by girdling the thorax, either by fixed bands or by elastic straps.

5. That, being porous and permeable to the air, it does not interfere with the insensible perspiration, and is therefore infinitely more healthy than the shellac, gutta-percha, felt, leather, rawhide, silicate of sodium, or any of the other substitutes that have been suggested to take its place.

6. That it does not "breed vermin" or other filth, as has been charged against it, but is, on the contrary, more cleanly and more healthy on account of its porosity.

7. That, in cases of rotary lateral curvature, when the deformity can not be overcome by any amount of lateral pressure until the column has been elongated—as was most conclusively proved by Dr. A. B. Judson in his beautiful experiments before this Academy some years since—the plaster-of-Paris bandage can be more *accurately* applied than any other material, and, being thus accurately adjusted to all of the irregularities of the body, and closely fitting it in every place, will retain the body in the improved position which partial self-suspension gives it better than any other device, and be infinitely more comfortable to the patient.

From all these facts we feel justified in quoting the language of Mr. William Adams, of London, at the International Medical Congress held in Copenhagen in 1884, when he said: "The modifications in the plaster-of-Paris jacket which Dr. Sayre has recently introduced and exhibited to this meeting seem to have *perfected* the jacket as a mechanical support."

PRIMARY LAPAROTOMY IN EARLY EXTRA-UTERINE PREGNANCY,

WITH THE REPORT OF A CASE.[*]

By JOHN S. HAWLEY, M. D.,

ATTENDING GYNÆCOLOGIST TO THE NEW YORK HOSPITAL, OUT-PATIENT DEPARTMENT; ASSISTANT SURGEON TO THE NEW YORK CANCER HOSPITAL.

By "primary laparotomy" is meant the operation defined by Janvrin[†] as "abdominal section performed for the removal of the tube and its contained fœtus before any hæmorrhage has occurred into the peritoneal cavity from a rupture, or a partial rupture, of the cyst-wall, the pregnancy having been diagnosticated prior to the laparotomy, and the operation performed with the expectation of delivering the tube and its contained fœtus *intact*. Furthermore, this must have been done before the fourth month of the gestation." The term is not to be confounded with that signifying abdominal section in the *later* months of the gestation, before the death of the child, but is to be confined strictly to laparotomy *prior to rupture of the sac* and during the first four months of gestation. The operation has been proposed for the last twenty years, but never performed, so far as is known, until September 11, 1887, when Dr. Price, of Philadelphia, removed the tube containing a fœtus by abdominal section. The case was reported in the "Annals of Gynæcology" for March, 1888, no details, no history, and no statement as to previous diagnosis being given, but simply the fact that "abdominal section was performed September 11, 1887; tubal pregnancy; tube removed intact; irrigation; no drainage; recovery." In a letter from Dr. Price to Dr. Janvrin is the statement in regard to the case: "The history was simply one of delayed bleeding for two weeks, constant pain, and nausea. I operated for extra-uterine pregnancy or pus-tube."

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[*] Read (in part) before the Obstetrical Section of the New York Academy of Medicine, May 24, 1888.

[†] "New York Medical Journal," April 28, 1888.

From this statement the inference must be drawn that the gestation had advanced but five or six weeks, if such construction can be placed on the expression "delayed bleeding for two weeks," and that the diagnosis was but a recognition of the possible existence of a tubal pregnancy. Nevertheless, to Dr. Price belongs the credit of establishing the feasibility of the operation, and of originating a course of treatment long under consideration, but never followed, and certainly destined to a recognized place among the resources of the gynæcology of the future.*

As to the question of priority in performing this operation, I say there is no record. Parry states positively, in 1876, that thus far "it has never been performed." The only statement that I have been able to find tending to show that it may have been done since that time was that made by Martin, who reported success in eight cases out of nine operations for tubal pregnancy, and stated that in the one fatal case "*the tube had already ruptured.*" Janvrin, however, states that, in conversation with Martin, he became satisfied that all the operations were secondary to rupture.

The case now to be reported, then, is certainly the second on record, or the first if positive diagnosis and deliberate operation in consequence are taken into consideration, though I fancy that this can hardly be a fair requisite for constituting an operation a primary laparotomy to any practical extent. A tentative diagnosis is the only possible conclusion justified by the symptoms in the early weeks of ectopic gestation, in the majority of cases, as the first suspicious occurrence is often the rupture of the sac. All other abdominal sections reported have been subsequent to that accident, or in the later months of gestation.

The following is the history of the case:

C. S., aged thirty-nine, of German birth, married twenty years, the mother of ten children, twin pregnancy occurring once, and having had one abortion, induced twelve years before, sterile for eight years, first consulted me in June, 1887, for the relief of menorrhagia, dating from the time of abortion, twelve years, but interrupted by three pregnancies during that period of time. Examination disclosing no evidence of inflammatory action of even remote occurrence, or of any growth in the pelvis, I advised and subsequently performed the operation of curetting, and removed a large number of ordinary fungosities, noting a rough patch near the right uterine horn, from which the growths were removed only after repeated attempts and the employment of some force. Only temporary relief followed, and in the autumn the menorrhagia was as troublesome as before. She refused to submit to another operation, but usually sent for me when menstruating.

On March 23, 1888, I was called to attend her, and was informed that she had last menstruated normally in the latter part of January, and had had no bleeding until some two weeks after the next period was due, when a very slight show was observed. On the following day she was seized with severe pain in the hypogastrium, lasting for an hour, and similar to the pain of labor. During this time the nausea, etc., of early pregnancy were well marked, and she felt certain that conception had occurred. The slight show of blood had continued for about two weeks before she sent for me, and at 5 P. M. on the day I called —my visit was made about 10 P. M.—she had a severe attack of pain, described as cramping and referred chiefly to the rectum, lasting for about three hours, and accompanied by much more hæmorrhage than had previously occurred. Believing that I had to deal with a case that threatened abortion, and not receiving the impression that the pains were to any degree accompanied by shock, I told her to remain quietly in bed, and to call me if any further trouble ensued. On the following day the hæmorrhage had ceased, there had been no return of the pain, and examination showed that the os was not dilated, and that no abnormal condition was apparent. This examination was made in a perfunctory manner, with the patient in poor position, and with the chief design of ascertaining the condition of the os. Though I was not so informed at the time, I have since learned that several more attacks of pain, at intervals of a few days, were experienced until about April 5th or 6th, when the hæmorrhage again became profuse to such an extent that I was obliged to tampon the vagina. This effectually stopped the flow for two or three days, when it returned, and, with but slight pain, a mass (which was thrown away before I arrived) was passed from the vagina. This mass was described as of "about the size and appearance of a 'medium' oyster, a part looking like blood-clot and the rest like a bag of fluid." This graphic description being fairly good as one of an eight-weeks' ovum, after reading her a lecture on the advisability of preserving any similar products in the future, I examined her, found the os well closed, and a feeling of fullness, ill-defined and somewhat sensitive, in the right ovarian region, and not larger apparently than a pigeon's egg. As I was at the time busily engaged in looking up the recent literature of extra-uterine pregnancy, the possibility of such being the present case came into my mind, but was soon dismissed as improbable, for I was then only partially informed as to the sequence of events, and could get but little definite information by questioning. After a few days, no untoward symptoms having appeared, I ceased my visits, and saw nothing more of the patient until April 27th, when she informed me that the bleeding still continued when she was on her feet, and that she had had another severe attack of pain two days before. I examined her, and was surprised to find a smooth, cystic, ovoid tumor, of about the size of a large lemon, occupying the *cul-de-sac* and displacing the uterus forward and to the left. The mass was only moderately sensitive, and was adherent to the uterus and the floor of the *cul-de-sac.* No history or physical signs of acute inflammatory action were had, and my diagnosis was immediately and positively made; for, as the history was recalled, and previously unknown facts were elicited by direct questioning, and from the position, character, and knowledge as to the recent development of the tumor, I could see no escape from the conclusion that it could be nothing else than the sac of a tubal pregnancy. Dr. Clement Cleveland saw the patient on the following day, and confirmed the diagnosis.

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* Since the foregoing was written, Dr. Price, writing under date of May 23d, has sent me the following details of the case: The patient had been married eleven years, had had two children at term, followed by six miscarriages; last period absent; rational symptoms of pregnancy—viz., nausea, frequent micturition, etc. Examination showed an enlarged cystic tube on the right side. "The history and physical signs were rather clear, but not positive. The period of gestation, about the seventh week; there was no evidence of hæmorrhage in the cyst-wall; the cause of the pain I could not explain, except as due to uterine adhesions." Dr. Jones, of Brooklyn, has also reported a case operated upon, December 5, 1887, in which the tube was distended to the size of an English walnut, and found to be the seat of ectopic gestation. No symptoms existed in this case indicating the possibility of pregnancy, and the tube was removed under the impression that salpingitis existed. The patient was twenty-four years of age, had been married two years, and was sterile. Good recovery from operation.

The tension of the cyst-wall had perceptibly increased since my examination twenty-four hours before, and a slight attack of pain had been experienced during the same time. Rupture seemed imminent, and the delay necessary to the employment of galvanism so dangerous that I decided to operate as soon as possible. The patient readily consented when the facts were explained to her, and on April 29th, forty-eight hours after the diagnosis was made, with the assistance of Dr. Cleveland, Dr. Traub, and Dr. Broun, I removed the cyst intact by abdominal section. It was found closely attached by recent easily separated adhesions to the posterior surface of the uterus, the intestine, and the floor and right wall of Douglas's pouch, and was formed of the pavilion and outer extremity of the left tube, which had curved around behind the uterus to the right ovarian region, where were found the most firm adhesions. There was no corpus luteum in the left ovary, and, from the position of the sac, the ovum must have originated in the right ovary, which was not disturbed, as nothing abnormal was detected by the touch. The hæmorrhage from the separated adhesions was so trifling as to need no treatment. The peritoneal cavity was irrigated with water which had previously been boiled, a glass drainage-tube passed down to the bed of the cyst in the *cul-de-sac*, and the wound closed. The patient's recovery was rapid and not interrupted by a single unfavorable symptom, the highest recorded temperature being 100·4° F. thirty hours after the operation.

Incision into the sac revealed a fœtus of not more than six weeks' growth, but no blood-clot or other apparent cause for its imperfect development was found.

The woman's husband has since informed me that the last sexual intercourse was had at least eight weeks before the operation, and even if this were a case of co-existent extra- and intra-uterine gestation, which is highly improbable—the former a case of superfœtation and the latter the supposed ovum expelled four weeks previous—the statement may be justly made that the fœtus had been dead from two to five weeks, and that the sac had rapidly increased in size, and premonitory symptoms of rupture had been exhibited notwithstanding that fact. Electricity, then, if used in this case, would have had no effect save one modifying the nutrition of the cyst-wall, if it indeed possesses any such action.

I am well aware that my course in selecting abdominal section as preferable to galvanism or faradization is open to very grave criticism in the minds of the majority of American gynæcologists at the present time; and though, in this case, the means were justified by the end, that fact is no argument in favor of what might have been a fatal procedure, especially as less dangerous means were available. But this very case seems to me to illustrate what I believe to be the true sphere of primary laparotomy for tubal pregnancy. The symptoms indicated impending rupture; the period of gestation was that most frequently marked by the accident; the cyst was rapidly growing, and had increased perceptibly as to the tension of its walls during a single day; and, believing thoroughly that no time was to be lost, and that the risk of abdominal section was less than that of rupture, I chose the former as the least undesirable horn of the dilemma. I am no advocate of indiscriminate laparotomy for trifling symptoms, as so often practiced to-day. I have a wholesome respect for the danger attendant on the simple exploratory incision so much recommended and practiced, for I have seen death follow it when made by one of our most experienced and expert operators. I am of the firm belief that true surgery demands, first, prompt, decisive, vigorous action when an emergency arises; secondly, the anticipation of a threatened emergency of the near future by action while all the conditions are most favorable to success; thirdly, conservative treatment when no danger seems imminent, or when danger may be easily averted at the time it may appear; and, lastly, by so suiting the action to the case, not the case to the action, that the indications for action are followed, not ignored. Hitherto laparotomy has been entirely reserved for emergencies by the supporters of electrical treatment; and the only argument against its early performance is, that it is too dangerous a method to employ when less dangerous and very efficient means are available, with the added very true statement that the operation can not be successfully done by the inexperienced practitioner, and should therefore give way to electricity. Moreover, if the latter fails, there is still the opportunity of employing the operation to arrest the hæmorrhage. In other words, the practitioner living far from a surgical center is not capable of performing this serious and delicate operation, and so must use electricity. But how if the sac ruptures during the treatment, or he is called to a case in which rupture has already occurred? Authorities answer in chorus, "*Aut sectio abdominis aut nihil,*" and he who was incompetent to remove a tube by laparotomy under not unfavorable conditions, and with time to make the necessary preparations, must either do the operation under the most difficult and complicated circumstances on a patient perhaps moribund—at all events, pulseless from shock—with inefficient assistants or none at all, and with a peritonæum full of blood, or calmly allow his patient to die with never an effort to save her. Is it strange that the operation is cursed with a high percentage of mortality, equaling or exceeding that of Nature's work? But is it just to judge the merits of the primary operation by the mortality of the one done subsequent to rupture of the sac?

The chief argument brought against the primary operation—that it is too dangerous a method to be employed save as a last resort—diffuses a strange, moldy odor when haled from its niche in the family vault of medical and surgical opinions through the atmosphere in this year of grace 1888; at a time when laparotomy is habitually urged and performed for the relief of affections most trivial, so far as their danger to life is concerned, and only interfering with the comfort of the patient on periodical and intermittent occasions, but is denied the patient when the most fatal and terrible, from its unsuspected presence, of all the varied and complicated diseases to which her sex is liable hangs over her head like the sword of Damocles, and because it involves danger to life! Is not this the last bond which unites the progressive surgeon of to-day to the moss-grown, worm-eaten tenets of the surgery of a half-century since, which made ovariotomy and licensed assassination synonymous terms? Were opportunities for making an early diagnosis more frequent, thereby rendering more irksome the shackles forged from the antiquated opinions of a dead past, men would not to-day come red-handed from the operating-room, bearing manuscript accounts of myomotomy or some specimens of hydrosalpinx in a jar, to condemn an earnest attempt by radical measures to anticipate what is known to be a deadly peril, and honestly believed to be momentarily expected to show itself, because, forsooth, this attempt is not devoid of danger! Every one apparently confounds the primary operation with that done after rupture of the cyst, the surgeon who attempts which is truly fortunate if his scalpel makes the neat incision of the laparotomist, and not the free-handed, clavicle-to-pubes gash of the pathologist. Hesitation, Micawberism, and timidity, when an emergency arises, are more prolific causes of death and unfavorable statistics than capital operations when given a fair field; and waiting for the miraculous passage of a five-inch head through a two-inch pelvic inlet until the patient is utterly exhausted has been the true cause of death in many a fatal Cæsarean section. What one has to do, let him do quickly, for prompt action is the only key to success in such cases. Thus, fifty years ago, after contemplating the appalling mortality of ovariotomy, which he never performed until the patient's vitality was carefully sapped, and the tumor firmly fixed to the abdominal viscera by repeated conservative tappings, the surgeon lifted up his voice and cursed the day the operation was born, threw away his knife, and thenceforth busily plied his trusty trocar; and when his patient ceased to struggle longer, drawing back into his hard shell, he congratulated himself that even if he could not save her life he at least had not robbed her of it by a dangerous operation; and then amputated the thigh for a punctured wound of the knee joint within an hour. Is it not the faint memory of the teachings of such a one that lends that curious heterodoxy to the surgical doctrines of to-day, which impels the bold, experienced, successful laparotomist to propose and perform the exploratory incision for reflex symptoms or hysterical manifestations with no more thought of danger than in making a vaginal examination, but to raise up his hands in holy horror at the iniquitous and murderous proposition to employ the same simple means to settle the diagnosis, or remove the cause, of a most appallingly fatal danger, and to press the claims of a method of treatment which, when successful, leaves behind what may prove a source of irritation or suppuration, the presence of which he would never dream of tolerating for a moment under other circumstances?

It is much to be regretted that this jealously guarded principle of conservatism is not always enriched by the bright jewel consistency, for the sake of the reputation of its guardians as scientific theorists and practical surgeons; and why this virtuous condemnation of a radical and eminently surgical operation, which strives, by taking a slight risk, to place the patient beyond the pale of an impending death, should be confined to this one condition—of all others the least demanding it—is one of those strange nondescript things which one only sees when unprovided with a suitable weapon.

Another strange aspect of the controversy is presented by the fact that—though the primary abdominal section for tubal gestation has been proposed and discussed by gynæcologists for many years, and has been earnestly advocated and as uncompromisingly condemned, without a solitary instance on record of the employment of this means of treatment—all other proposed laparotomies for divers abnormal conditions in the female pelvis have been welcomed with indecent haste, and only abandoned, or restricted in use, after a bitter experience—for the patient. As an example of the unfair manner in which this operation has been judged, I will quote one or two statements from a recent article in the "American Journal of Obstetrics and Diseases of Women and Children" for May, 1888, pp. 474 *et seq.* The writer, in pressing the merits of electricity as the preferable treatment as compared with laparotomy, says: "Lawson Tait . . . recommends abdominal section, and *is sustained by a brilliant series of successes*" (Italics mine). "*But in the experience of other gynæcologists laparotomy has not been so successful.*" He then instances statistics of the abdominal section *for extra-uterine gestation, collected eight years ago* (when abdominal surgery was just out of its swaddling clothes), showing a greater mortality than when Nature was given full charge of the case, and with no explanation as to the period of pregnancy, its variety, or the intact or ruptured condition of the sac; and even drawing from these considerations of an entirely different operation the final conclusion that when the diagnosis has been made in early ectopic gestation, all cases will be treated by electricity, and abdominal section will become a thing of the past! And this when only one instance, and that successful, is on record of the operation he deprecates. All authorities agree that the only treatment, save the *laisser faire* variety, at the time of rupture is necessarily laparotomy, elytrotomy being justly ignored. Had the writer of the foregoing not been too zealous to advocate the treatment he found so successful, to the utter exclusion of its so-called rival, he would not have lost sight of the fact that he was arguing against the employment of the only means of treatment left after electricity had failed, or the case had advanced to a point beyond the time which limited its utility as a means of treatment. Mr. Tait lays particular stress on the fact that, even in his large experience, he has seen *but one case prior to rupture of the sac*, and that it ruptured so soon after his examination that the diagnosis must otherwise have been made only by the abdominal section he had decided to make for the removal of pyosalpinx, which he had diagnosticated in the absence of all symptoms of pregnancy. There is no question of preference between electricity and secondary laparotomy; and why, then, bring up the mortality and difficulties of the latter operation as arguments against the performance or justifiability of primary laparotomy? As well argue that no parovarian cyst should be removed by laparotomy because of the difficulties and great mortality of Freund's operation!

The truth is that authorities, in discussing the rival merits and comparative utility of electricity, on theoretical grounds, with those of primary laparotomy, employing the first but never the latter, have lost sight of the fact that but one method has been employed, and have unconsciously saddled the untried method with the sins of an entirely different operation; and have also added all the bad results of every abdominal section for any condition whatever to the load borne by this abused and downtrodden innocent, never thinking that they have been contemplating the evil deeds of other "desperate and unjustifiable operations, performed when safe and simple measures are available."

Fair play is a jewel, and even the natural prejudice excited in favor of a method of treatment which has been apparently successful in one or two supposed cases of extra-uterine pregnancy in a man's own experience should not blind him to the fact that there are tubal pregnancies and tubal pregnancies; and that, though electricity may have been the proper treatment in his case, he has no right to maintain that it will be unjustifiable to use any other method in another case; nor should it lead him to cling obstinately to the memory of that insignificant experience, deaf alike to reason and the dictates of common sense, which tells him that discrimination is to be used in selecting the treatment which is to meet different indications presented by the various stages of the same disease.

Let us now examine into the validity of the assertions made in favor of electricity as the sole indicated treatment in tubal gestation prior to rupture of the sac, after the same general manner which has been assumed by its supporters in considering the merits of laparotomy. These assertions are that it is simple, safe, efficacious, and conservative, and, even when unsuccessful, does not complicate or interfere with subsequent laparotomy, if that operation is demanded by rupture of the sac.

The simplicity of the method is undeniable, though authorities differ widely as to the relative value of the galvanic and faradaic currents as a fœticide. Electro-therapeutists almost universally favor galvanism, used with or without interruptions, alleging that it is vastly superior in chemical, physical, and physiological effects, and equal in mechanical power to the faradaic current. Moreover, its force and the amount administered can be accurately gauged and measured, while the dosage of the faradaic current is only to be regulated by the sensations of the patient; in fine, that the use of the former is scientific and intelligent; that of the latter, haphazard. Now, the chemical or electrolytic and physiological effects of the faradaic current are almost *nil*—at least in the current strength used in this treatment—as has been shown by experiment on living tissues; but its use has given better results in extra-uterine pregnancy than that of galvanism. Garrigues stated, in a discussion on this subject at a recent meeting of the Section in Obstetrics of the New York Academy of Medicine, that he had noticed an *immediate* reduction in tension of the cyst-wall of a tubal pregnancy after a fifteen-minute application of the faradaic current. He admitted that no explanation of this unique effect could be made, and we are forced to conclude that, if such is the case under all circumstances in the treatment of ectopic gestation by faradism, that agent must exercise a natural selection for the amniotic fluid, causing it to disappear mysteriously, whither or how we know not, as the current can not be persuaded to produce similar results when applied to any cyst save that of tubal pregnancy. One more desirable quality of the faradaic current has been discovered—its value as a means of diagnosis of cystic tumors of the female pelvis from extra-uterine gestation sacs; for, if no effect on the tension of the cyst is observed after a short time of faradization, we can be positive that the suspected cyst is *not* an extra-uterine pregnancy.

All, with the exception of Apostoli, condemn electropuncture of the sac; and all, with the exception of Garrigues, agree that the use of electricity should be practically limited to the first four months of gestation; for, if rupture does not occur before that time, the chances are in favor of the child reaching a viable age; or that Nature has already done all that electricity could accomplish. Rockwell urges the necessity of using great care in the employment of electricity during the period in which rupture is most prone to occur, in order that this accident may not be caused by too sudden variations in the strength of the current, or too great concentration at one point.

Thus far but one death has been reported as having occurred during the course of treatment by electricity—that of a patient of Janvrin's, the fatal result being due to rupture of an artery in the cyst-wall after the third application of the galvanic current. No cases of suppuration of the cyst have been reported except in those in which the treatment had been employed after the fourth month of gestation, although several instances of such a result of its use during the later months of fœtal development are on record. Several cases, however, have been reported in which unequivocal symptoms of rupture or serious hæmorrhage were developed during the treatment, but all finally ended in recovery—three being cases of interstitial pregnancy, the sac rupturing into the uterine cavity and resulting in almost immediate expulsion of the ovum (McBurney); in retention for three months (Trush); and in retention, with contained development to the *eighth month*, the child being *born alive* (Garrigues). But Janvrin, while examining a patient, felt the tumor he had diagnosticated as due to interstitial pregnancy diminish in size under his hand, and very soon secured the fœtus from the uterine cavity. There is, then, no strong proof that the electricity resulted in any one case as the active agent in the production of these results unless its power to cause strong contractions in the cyst-wall, and consequent rupture, is advanced as an argument in its favor. If so, its use can not be too strongly opposed, for rupture can not be made to adapt itself to that point in the sac-wall most favorably located for the subsequent arrest of the hæmorrhage or the progress of gestation.

There are those who hold that rupture of the sac is but the effect of the efforts made by the vicarious uterus to rid itself of a dead fœtus—that death of the fœtus causes rupture of the sac—and, therefore, treatment causing arrest of fœtal development is wrong in principle and practice. But this view is not at all justified by known facts, for the fœtus often continues its existence after rupture of the sac, as is conclusively proved by the conditions found in cases of ventral pregnancy. Moreover, very strong evidence is afforded by specimens and personal observation that the fœtal sac is not always dependent on the life of its tenant for continued and vigorous growth—the case reported in this paper furnishing an admirable illustration of this fact—and therefore electricity, if successful as a fœticide, gives no positive promise of preventing rupture unless it can so modify the nutrition of the sac as to cause absorption or mummification of its contents and atrophy of its walls. This is Nature's method of cure, but she seldom employs it, for many a case demanding operation for arrest of hæmorrhage has shown only a ruptured sac with placenta and membranes, but never a fœtus. What had happened to the embryo? Had it been overlooked when the clots were removed? Or had it parted with its young life long before, and when still so small as to attract no notice, while the sac had continued to develop? Why should electricity receive credit for what has frequently occurred when the case had been left to Nature?

The principal stumbling-block in the path of the investigator of this question is the uncertainty of diagnosis, which is usually made only when the alarming symptoms of rupture appear. Can any conclusive evidence as to the success or value of any plan of treatment be offered when there is no certainty in regard to the actual condition treated? Something more than personal opinion or belief, on which statistics are based, is needed to make those statistics at all admissible when arguments *pro* and *con* on a method of treatment are heard. Even granting that the diagnosis is correct, another obstacle is encountered. How can one maintain, in cases in which rupture has occurred or takes place during electrical treatment, that his use of the agent had anything to do with the result? No one has alleged the power to arrest hæmorrhage for electricity, or the ability to cause desiccation of the fœtus. That is left to Nature; and recovery after rupture of the sac is solely due to her work. But electricity often gets the credit of a cure when the only evidence of its action presented is the occurrence of rupture! Therefore, in many cases of alleged cure by electricity, there is no reason to believe that recovery was aught but a coincidence.

Brothers ("Am. Jour. of Obstet. and Dis. of Women and Children," May, 1888) has collected forty-three cases of ectopic gestation treated by electricity, at all stages from six weeks' to eight months' development, with but two deaths. To this list may be added three more—one reported by Kletzsch in the same issue of the journal, and the others by Buckmaster and Garrigues at the meeting of the Obstetrical Section of the Academy of Medicine, May 24, 1888. One of the fatal cases—that reported by Hicks, in which puncture of the sac was employed five weeks after the electrical treatment had been abandoned—and two in which suppuration and subsequent discharge of fœtal remains followed the treatment, both being ventral pregnancies of five and eight months' growth, respectively, as well as all others of the list treated after rupture or after the fourth month of gestation (for the present question only concerns the treatment prior to that period), may be properly excluded, leaving a total of thirty-nine cases with one death—a mortality of 2·56 + per cent. Of these thirty-eight successful cases, symptoms of rupture during treatment occurred in five; and of these, three were interstitial pregnancies rupturing into the uterine cavity, and just now mentioned; one (Mundé) in which collapse followed the first application of the current; and one (Kletzsch) in which collapse and septic symptoms appeared after a few applications. The fatal case (Janvrin) showed rupture of an artery in the cyst-wall after the third application, the integrity of the cyst itself not being destroyed. We now have thirty-nine cases with one death and five ruptures of the sac, three of which were ascribed to contractions in its wall *set up by the current*, leaving a total of thirty-three cases of successful employment of electricity in arresting the progress of gestation. This would constitute a most powerful argument were there no question as to erroneous diagnosis.

In these thirty-three cases there existed strong evidence in favor of the accuracy of the diagnosis; but, as no positive proof of this can be furnished in any one case, the doubting Thomases of the profession refuse to allow testimony founded solely on belief, be it ever so thoroughly justified by the facts of symptoms and physical signs. Several instances of mistaken diagnosis have been reported in which almost classical histories of misplaced gestation and enlargement of the tube have been presented; but operation has revealed salpingitis, with not even a possible trace of gestation. The reverse is also true. Extra-uterine pregnancy has been mistaken for salpingitis, as was the only case Tait ever saw prior to rupture, and which gave no definite history and simply the ordinary physical signs of perimetritis. If the electric current can arrest the growth of an extra-uterine gestation sac, why can it not cause the disappearance of a hydrosalpinx or a parovarian cyst? Does it follow an elective course, promptly attacking and conquering the tendency of an ectopic pregnancy to continue its existence, but passing by on the other side of the way a cyst of the broad ligament or a hydrosalpinx? Electricity, being a blind force, is an excellent servant; but, so far from being imbued with the inconsistency of its masters, has disgustingly regular habits of acting in the same manner when the same conditions exist; and whenever it is detected in an apparent vagary, sooner or later some reason will be discovered for its peculiar conduct other than a pathological one.

The gynæcological agnostic, then, would be prone to look upon all these recorded cases as possible mistakes in diagnosis, and to narrow down the admissible testimony to that offered by the one fatal case, which proved its true character post mortem; and, if admitting the accuracy of the diagnosis in the three cases of interstitial pregnancy with expulsion of the fœtus into the uterine cavity, would argue that, if the electrical current had caused strong enough contractions of the cyst-wall to accomplish that result, it would be a dangerous mode of treatment to apply when the sac was less favorably located, as rupture would be caused, not prevented, by its use. Therefore, if we reason from practical, unquestionable facts, we must conclude that the evidence goes to prove that electricity is a dangerous and utterly unjustifiable means of treatment of ectopic gestation in its early stages. So much for the value of its statistics, or the decision of this question on theoretical grounds. I am fully aware that this reasoning is unjust, and do not advance its conclusions as my own belief; but it is equally as just as the logic which has been employed in the adverse conclusions in the consideration of the advisability of early abdominal section.

The last statement made for electricity—that it in no manner prevents or complicates subsequent laparotomy—needs but little comment. If the delay which allows old adhesions to become more perfectly organized and new adhesions to form; if constant danger of peritonitis, adhesive or more extensive in character, from slight hæmorrhage from ruptured arterioles in the cyst-wall; if a peritoneal cavity full of blood, or containing a partially decomposed fœtus and a quantity of septic fluid, and a patient in collapse from shock and loss of blood; if the necessity of performing the operation at a moment's notice, perhaps with no time to make proper or adequate preparations, in an improper place and inconvenient time—if all these very possible conditions are not prejudicial to the success of the operation, this statement is valid. No one advises palliative treatment in strangulated hernia until general peritonitis and stercoraceous vomiting demand operation. No one advises treatment of incipient epithelioma of the cervix by astringents or caustics until the disease has invaded the broad ligaments, or the cancerous cachexia has been developed, before high amputation or hysterectomy is to be performed. Conservatism of this character has only been successful when a mistaken diagnosis has been made; and in this age of progress in medical science, treatment based on the probability that an incorrect diagnosis has been made can scarcely be said to be in accordance with existing ideas as to the treatment of disease, for these aim to become exact principles, and take no account of possible miracles, save as interesting anomalies.

The merits of primary laparotomy are perfectly valid, if the two great objections to its use by the general practitioner—special skill and experience needed, and the danger involved in opening the peritoneal cavity—are disregarded. That they should be ignored by the specialist seems plain, for they are attendant on every operation involving abdominal section; and the discussion as to the comparative merits of two modes of treatment should be on their merits, and not on the operative ability of the general practitioner.

Twelve years ago Parry * wrote, while urging an immediate resort to laparotomy at the time of rupture of the fœtal sac: "The question is not, Will the patient die after the operation? It is, Will she get well if abandoned to nature? . . . Are the dangers of opening the peritoneal cavity less than those of the rupture? The history of abdominal surgery" (this, remember, was written twelve years ago) "and that of the condition which is being discussed, teach us that they are unfortunately less." Again, in considering the propriety of laparotomy prior to rupture of the sac, he wrote: * "If the diagnosis of misplaced gestation was certain in any case, . . . the operation would be perfectly justifiable. . . . The fœtal sac might be extirpated, or, if this was not possible, the *supra-cervical portion of the uterus and its appendages could be removed with a better prospect of the woman's recovery than she would have after rupture of the sac.*"

Twenty years ago Dr. Stephen Rogers, of New York, was bold enough to advocate removal of the sac as soon as the condition was recognized. Twenty years ago abdominal surgery—a weak, puny, undersized infant—was being fed on peptonized milk, and was kept in a roll of cotton-wool, for the preservation of its feeble existence. To-day, in the full strength of a vigorous adolescence, with every promise of attaining the perfect development of full manhood, shall we clothe it in the hybrid kilt-skirts of childhood when introduced to ectopic gestation, but allow it the virile garb of trousers and a tailed coat when presented to all other visitors? This is most unfair to both the boy and the visitor, and will but cast upon us deserved ridicule.

Such were the ideas of the preceding generation in regard to the treatment of extra-uterine pregnancy, promulgated at a time when a mortality of twenty per cent. was considered a brilliant triumph for ovariotomy, and a proposition to open the abdomen in order to remove an enlarged imprisoned ovary would have been greeted with a vigorous cry of protest. But these authors knew what they proposed was the least of two dangers, and their conservatism was formed after the pattern proposed by the biblical rule to enucleate the eye or amputate at the wrist, rather than take a great risk of general septic infection from the conservation of a diseased organ, be it ever so important a member of the body. During the last two years, Janvrin, of New York, has been almost, if not quite, alone in his earnest plea for early laparotomy, for he had lost a patient from hæmorrhage during treatment by electricity. Others have since profited by the lesson taught by this case, that fatal results may occur even after fœtal death, and have lifted up their voices in the cause of surgical and certain treatment, as opposed to blind guess-work as to effects produced, or conjectural ideas in regard to the condition treated.

Primary laparotomy does involve danger; but does not also electricity? Primary laparotomy requires surgical ability and a knowledge of the best method of dealing with complications; but does not electricity need special instruments and apparatus not possessed or easily used by the general practitioner in this condition? How many of the profession to-day, engaged in general practice in city or country, possess a milliampèremetre or a rheostat; or even know what is meant by the names? The surgeon of the backwoods-district always has a scalpel, artery forceps, needles, and silk, but rarely a reliable electrical plant, or any knowledge of its practical intelligent use.

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* "Extra-uterine Pregnancy," 1876, p. 220.

* *Ibid.*, pp. 202, 203.

No uncertainty attends the operation. If done in pursuance of a mistaken diagnosis, it relieves the patient of a neoplasm, or is merely an exploratory incision. If the diagnosis is correct, it shows the fœtus, or the incontrovertible proof that pregnancy existed, and leaves behind no tumor of unknown nature, or cause for subsequent trouble. It is not a difficult or complicated operation if performed at an early period; it is conservative in the true sense of the term—that of anticipating, by measures fraught with slight danger, the great danger which is threatened; and, finally, it is truly surgical, and in accord with the best-known methods of dealing with analogous conditions. Its statistics are certain and its results unexceptionable.

Many of those who condemn the employment of abdominal section by gynæcologists as unjustifiable in many conditions, the influence of which they deny or are unable to appreciate, wot not of what they decry; and it is possible that the carping criticism of such men, and a desire to appear anxious to use other than operative measures when a choice is offered, is at the bottom of the curious inconsistency displayed by the opinions and practice of many specialists. The true surgeon should be above any fear of criticism when conscientiously doing what he honestly believes to be best for his patient, disregarding the jealous spirit which animates his detractors, who judge his motives by their own, and ascribe his tendency to progress as a sordid effort to advertise himself. As one has said, "Medicine is the noblest of professions, but the meanest of trades"; and that the advance of a grand science should be retarded by the unprincipled charlatanism or obstinate "old-fogyism" of some of its professors, from motives of jealousy or greed, is one of the most deplorable facts known to our civilization.

But if true conservatism is the order of the times, it has a most remarkable facility for masquerading in impenetrable disguises when sought among the general methods of the majority of gynæcologists. We hear little or nothing of electrical treatment applied to cystoma of the ovary or fibroma of the uterus except from the few who apply electricity to everything, and regard it as a near approach to the universal panacea. Were the hysterical patient, or the one with dysmenorrhœa, or the one flaunting the "pain in her side" in the faces of the various gynæcologists she consults, delivered into the hand of the neurologist, or deposited on some desert island—where hunting turtles' eggs or delving for yams would be essential to the co-existence of soul and body—our museums and private collections would contain fewer jars of ovaries, and our medical journals less extensive lists of laparotomies done during the last few years, and our women would not be the less healthy, less numerous, or less able to fulfill their destiny as mothers of the next generation. Less obloquy would be cast on the fair fame of gynæcology as a legitimate specialty were less attention paid to the practice of reducing all the ills that female flesh may inherit or imagine to ovarian and tubal disease; and that the influence of a promising past and the existence of an embryonic future should be handicapped by a hobby-riding, narrow-minded, inconsistent present, is more than unfortunate.

Away with the spectacles which, with imperfect lenses, distort the objects viewed through them, and cause the same operation to appear a panacea when done for an uncertain or benign affection, but unjustifiable when performed for the relief of a mortal disease! Out upon the practice—the balance in which human life and death are weighed—which makes no discrimination as to indications for treatment or probabilities of threatened calamity, but doggedly follows a set rule, refusing to enter the water until it has learned the art of swimming, and is content to sit on the bank of the stream which obstructs its further progress—while others boldly cross—waiting for the water to evaporate, or a bridge to be built by some one else!

It is far from my intention or desire to belittle the value of electricity as a means of treatment in this condition, when used in suitable cases, for I believe it to be most valuable and deserving of employment in very early cases. I do not believe that it should be displaced by laparotomy, nor that its conceded advantages should constitute it the only proper treatment up to the time of rupture of the sac. In my humble opinion, each of these methods has its own proper time and place, even as other conservative and radical methods are applied in other affections. And I hold that, if in the early stages of tubal gestation the electric current fails, after a reasonable number of applications, to arrest the growth of the cyst, or does not prevent the occurrence of the characteristic pains, or if the condition is not recognized until so far advanced, or presenting such symptoms as to create a fear of imminent rupture, in either of these conditions it is the surgeon's bounden duty to adopt radical and certain means of treatment, and not expose his patient to the dire results which may follow a course of misapplied and falsely so-called conservative treatment or unsurgical timidity in the face of an impending catastrophe; that the treatment should be fitted to the case, not the converse. Truly our women are in evil case if such principles are to guide the action of men to whom they come in their trouble and danger for succor.

Electricity and early abdominal section as means of dealing with tubal gestation are now on trial. Each has its undeniable advantages; to each are there insurmountable objections. It is not the tendency of this age to limit the methods of dealing with a progressive disease to a single one at every step of its advance from innocuous incipiency to full power to kill; and it seems most inexplicable that this mortal affection, pre-eminently demanding prompt and decisive action, should obstinately be made an exception to the general rule.

The two methods should not be rivals, but allies, and, so far from constituting a *casus belli*, should stand shoulder to shoulder, ready to fight, singly or in unison, the battles of the general who grasps the situation and manœuvres his forces to the best possible advantage. Such a one will not invariably reserve the same corps for use as a forlorn hope, and only bring it into the action when it must charge against overwhelming odds, after its fellow force has been flanked and broken. Nor will he argue that its limited experience under fire, or its poor showing when acting as a forlorn hope, are evidence that its fighting ability is of the least, or that its success will be equally poor when advancing against an equal force of the enemy.

It is my firm conviction that there will soon take place a strong reaction in the present tendency to overestimate the value of many operations involving the abdominal section, and that the indications for and restrictions upon their use will be more definitely formulated. And when the time shall come when dangerous methods are almost exclusively used for the relief of infinitely more dangerous conditions, and simple means of treatment are employed in disease rarely, if ever, compromising human life, primary laparotomy for early tubal pregnancy will no longer—with never a chance to bear witness in its own behalf—receive the odium of a verdict reflecting on its character as a justifiable operation, but will occupy an honored and prominent place among the brilliant and truly surgical achievements of the present age.

[Note.—Since the foregoing was written I have removed by laparotomy an unruptured tubal gestation sac containing a fœtus of about three months' development and beginning to decompose, and about two ounces of purulent and slightly fœtid fluid. The history of the symptoms dated back nearly five months; the patient had been kept under observation for two weeks, and no change had been observed in the cyst. The patient, when informed of the probable nature of the cyst, was anxious to have it removed; and its character—practically a pelvic abscess—rendered her request a very fortunate one. Exploratory incision was recommended by Dr. T. Gaillard Thomas, who saw the patient in consultation, and was performed on May 29, 1888. Thus far (June 9th) there have been no unfavorable symptoms, and the indications strongly point to a perfect and rapid recovery. The diagnosis was almost positive, but not so certain as that of the case reported in this paper. The cyst was adherent, but not so extensively as to prevent its removal with comparative ease. The sac-wall was very thin at its superior and posterior aspect, making the subsequent rupture and discharge of its putrefying contents into the peritoneal cavity an exceedingly probable result of a sudden effort or a fall.]

18 East Twenty-fourth Street.

THE VALUE OF ELASTIC TENSION IN THE TREATMENT OF FIBROUS ANKYLOSIS;

ALSO A DESCRIPTION OF AN APPARATUS FOR PRODUCING EXTENSION AND, AT THE SAME TIME, ROTATION OF THE FOREARM.*

By LOUIS A. WEIGEL, M. D.,
ROCHESTER, N. Y.

Previous to the introduction of *brisement forcé*, or the forcible rupture of joint adhesions under anæsthesia, the treatment of fibrous ankylosis consisted of gradual extension or stretching by mechanical means. It has been said that the introduction of the former procedure marked a new era in surgery, and it was supposed that the slower method would be entirely abandoned. A calm and unprejudiced investigation of the results of *brisement forcé*, however, will show that it does not accomplish all that has been alleged for it, nor that it is so universally applicable as we are led to believe by the statements in some recent surgical works. It is a noticeable fact that *brisement forcé* is the only procedure spoken of for overcoming fibrous ankylosis, no reference being made to other plans of treatment. Gradual extension seems to have become, comparatively speaking, a lost art. Some distinguished surgeons, including Langenbeck, Dieffenbach, and others, pronounce gradual extension inefficient, painful, and not free from danger, and Bauer* goes so far as to assert that "the superiority of *brisement forcé* over progressive extension can no more be questioned, and its former opponents have been effectually silenced by the overwhelming results of that practice." And yet it is well known that not infrequently violent inflammation and other untoward results supervene after the forcible rupture of joint adhesions, which certainly render ultimate success quite problematical, and increase the difficulty of restoring joint function.

The mechanical means formerly employed to produce extension or traction consisted of an endless screw, a rack and pinion movement, or similar contrivances. The defects of all appliances in which these principles are utilized are apparent; the use of rubber, however, is free from the objections which may justly be urged against an unyielding power, because it more nearly represents manual force and is continuous in its action. The value of elastic tension in fibrous ankylosis and other affections has been so fully demonstrated that nothing further need be added, except to urge its more extended use for such purposes.

In order to obtain the best results from the use of elastic tension, it is advisable to adopt a plan of treatment which will prepare a joint for the application of force, and also overcome those secondary changes in the surrounding parts that usually occur in joint affections. The therapeutic measures which constitute this treatment are local warm baths, massage, electricity, and wet packs. The two former are strongly advocated by Reibmayr,† of Vienna. He recommends the use of a local warm bath of from one half to one hour's duration, and massage practiced for from ten to fifteen minutes previous to each application of the elastic tension. Massage may also be resorted to for increasing the nutrition of muscles. When employed for this purpose, more time should be devoted to the extensor than the flexor muscles, for it has been shown that in the majority of the diseases of the extremities the former become impaired to a much greater extent than the latter.

It is now an accepted fact that an electrolytic effect can be obtained by the surface application of a galvanic current. It is necessary, however, to localize the current—*i. e.*, to pass it directly through the parts to be acted upon. Many joints are accessible for an application of this kind, and the catalytic action that results therefrom hastens the dispersion or absorption of effusions and exudations, and softens fibrous adhesions. In addition to the use of galvanism, the slowly interrupted faradaic current is of great value in overcoming the muscular atrophy which usually accompanies joint affections. The beneficial effects of electricity depend upon the selection of a proper current, and its correct application and variation according to the requirements of each individual case; hence it should always be applied by the physician himself. The application of the galvanic current in particular should never be intrusted to a patient.

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* Read before the Medical Society of the State of New York, February 9, 1888.

* "Lectures on Orthopædic Surgery," by Louis Bauer, M. D., New York, 1868, p. 311.

† "Die Behandlung der Ankylosen und Kontracturen mit Massage und elastischem Zuge," von Dr. Albert Reibmayr, "Wiener med. Wochenschr.," No. 25, 1885, p. 795.

The use of a wet pack is indicated to relieve the hyperæmia or congestion which sometimes results from the application of force and causes pain or soreness in the joint. A wet pack also exerts a favorable influence on a diseased joint by its general derivative effect; hence it is a good plan to have one applied on retiring, and worn during the night. Upon removing it, the joint will be cool, less painful, and more mobile.*

After a joint has been subjected to the preliminary treatment described above, it is in the best possible condition for the application of an apparatus for gradual extension. The length of time extension or traction may be continued must be determined by the peculiarities of each case, the condition of the joint, and the amount of force exerted. From one half to two hours will suffice, as a rule, for each application, and this may be repeated several times during the day. The amount of force exerted should never be so great as to cause severe pain.

In the following case, which came under my observation a short time ago, *brisement forcé* failed absolutely to improve the condition of the joint, while the use of elastic tension proved to be of great service, the patient now being able to extend the arm actively quite beyond a right angle. The range of motion is steadily increasing.

Case.—Miss G., aged twenty-one, sustained a dislocation of the right radius forward, which remained unreduced for ten days. An attempt was then made to reduce it under anæsthesia with apparent success; the arm was bandaged in a flexed position and allowed to remain so for ten days or two weeks; efforts at passive motion failed completely, the arm being firmly fixed in extreme flexion. An anæsthetic was again administered, the joint adhesions broken up, the hand placed in a semi-pronated position, and the arm bandaged as before. This dressing was allowed to remain unchanged for about two weeks, for the avowed purpose of bringing about an ankylosis, all hope of restoring joint function being now abandoned. When I first saw this case, about three months after the accident, I found the arm firmly fixed in the position last described, the patient being unable either to extend or rotate the forearm. According to the statement of the patient, each forcible manipulation was followed by violent inflammation, and after this had subsided the stiffness of the joint increased steadily from week to week.

The object to be accomplished by treatment in this class of cases is, of course, the restoration of the functions of extension and rotation, and an elastic tension apparatus is best adapted for the purpose. As no appliance has hitherto been constructed that meets all requirements, I devised an apparatus, which I herewith present for your inspection, that not only produces extension of the forearm, but rotation also, at the same time.

Fig. 1 shows a view of the complete instrument adapted for the right arm. It consists of two segments, *A* and *F*, corresponding to the arm and forearm, which are connected together by a new compound joint, *T*.

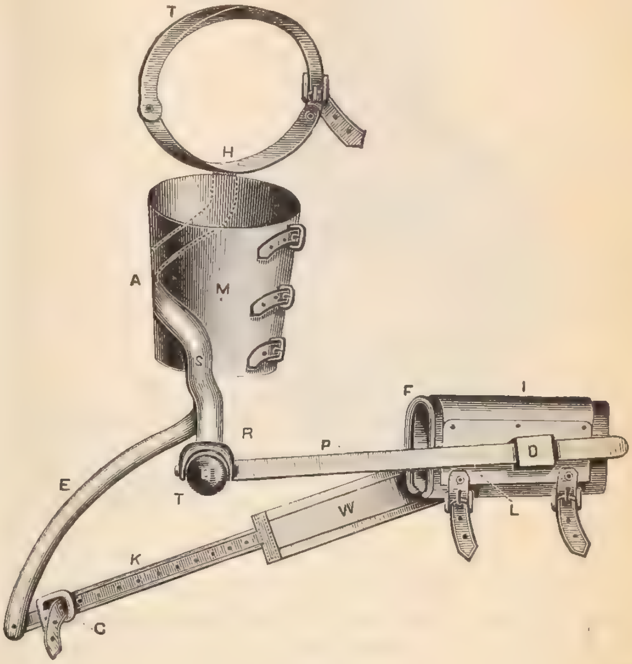

Fig. 1.

The arm segment is constructed as follows: A flat steel bar, *S* (Fig. 1), is curved so as to pass from the outer side of the elbow in a spiral direction, around the back of the arm, to the axilla, where it ends in a crutch-head, *H*. At the lower end of this bar a fork, *R*, is fixed. Just above this fork a curved metallic arm or lever, *E*,* passes backward and downward, its free end carrying a pivoted buckle, *C*. The forearm segment consists of a flat steel bar, *P*, the free extremity of which passes through a slot in a metallic block, *D*, to which a wristlet, *L*, is pivoted. This wristlet is constructed of two metal plates united by a piece of leather, *l*, and lined with thick, soft felt. The two bars, *S* and *P*, are connected together by means of a new compound joint, *T*, a view of which is shown in Fig. 2. This consists of a ball, *B*,† which turns freely on two axial bearings, *F*, passing through the prongs or arms of the fork, *R*, and is also hinged to the forearm shaft or piece, *P*, in the following manner: a deep and narrow slot or channel, *b*, is cut into the ball, *B*, at an angle of 45° from the above-mentioned axial bearings, *F*, and extends about two thirds through it. The proximal end of the forearm shaft, *P*, passes into this slot or channel, where it turns about a pin, *D*, which extends through the center of the ball and is fixed thereto.

To the inner metal plate of the wristlet a strip of stout rubber webbing, *W* (Figs. 1 and 3), is attached by means of a pivot, and ends in a strap, *K* (Fig. 1). The manner in which the webbing is attached to the metal plate is shown in Fig. 3.

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* For a description of the physiological effects, and the mode of application of wet packs, *vide* Winternitz's "Hydrotherapeutics," in vol. v of v. Ziemssen's "Hand-book of General Therapeutics."

* This lever is like that used by Dr. M. J. Roberts on several of his appliances.

† In Fig. 2 the diameter of the ball is shown about a third greater than the real size.

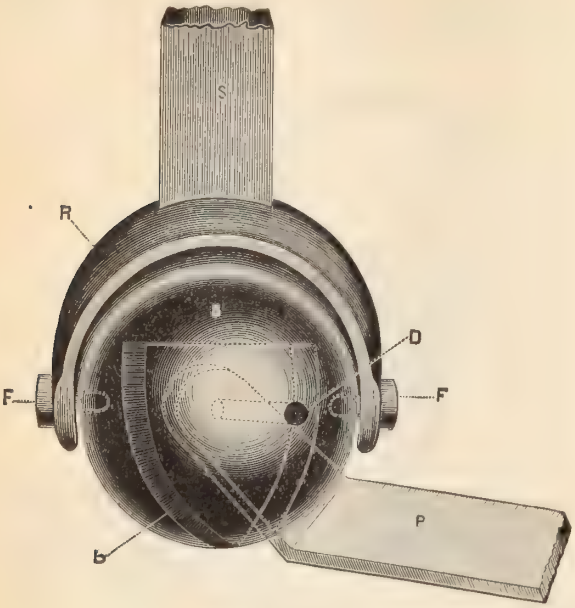

Fig. 2.

The mode of fixing the apparatus to the arm is as follows: The segment, *S*, is riveted on a strong leather armlet, *M* (Fig. 1), which is provided with straps and buckles. A strap, *t*, also passes from one end of the crutch-head, *H*, around the shoulder, to a buckle at the other end. The segment for the forearm is attached by the wristlet, *L*, which is also provided with straps and buckles for fixing it firmly in position.

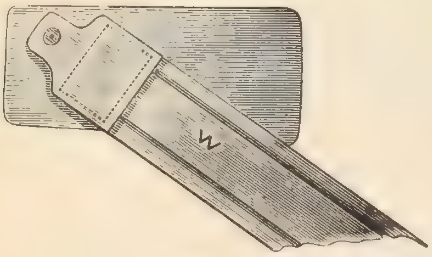

Fig. 3.

The essential and new features in the above-described apparatus are the mechanism or joint for producing extension and rotation simultaneously, the sliding forearm shaft, the peculiar construction of the wristlet, and the use of a crutch-head with shoulder-straps.

The manner in which simultaneous extension and rotation are obtained can be seen by examination of the compound joint or mechanism as shown in Fig. 2. It will be seen that the forearm shaft, *P*, is held in the oblique slot or channel, *b*, in the ball, *B*, by the pin, *D*, and must necessarily travel in it. Now, if any power is applied to the forearm segment which tends to force it downward, it not only causes the shaft to turn on the pin, *D*, and follow the direction of the slot from left to right, but also produces a rotation of the ball on its axis from right to left. When the movement permitted by the joint is completed, the forearm segment is fully extended upon the upper or arm segment and is directly continuous with it, occupying, however, a plane at right angles to it; in other words, a rotation through about 90°, as well as extension, has taken place. If the slot were cut at right angles with the axial bearings, *F*, instead of obliquely thereto, extension alone would result, as the shaft could move in one plane only; it would be simply a hinge. This is well illustrated in the joints of an ordinary folding pocket-rule.

In a mechanical appliance which is intended to produce extension and rotation of the forearm, a shaft which may change its position and direction becomes necessary for the following reasons: During extension of the forearm, a lengthening, equal to one half the diameter of the convex articular surface of the humerus, takes place. Furthermore, in pronation, the head of the radius rotates upon its own axis, while its carpal end, owing to the longitudinal curve of the shaft of the bone, describes an arc of a circle, and becomes twisted obliquely across the ulna, carrying the hand with it. In the above-described apparatus the forearm shaft, *P*, slides through the pivoted block, *D*, on the wristlet, and hence it can change its position and direction automatically.

At the anterior third of the forearm the bones are quite superficial, and hence favorably situated for the application of force. Now, inasmuch as this portion of the arm is elliptical in cross-section, it will be seen that a wristlet constructed in the manner above described conforms itself readily to this shape, and grasps the arm firmly, so that it can not change its position without carrying the arm with it. In the movements of extension and rotation the humerus is the fixed bone, while the radius and ulna are movable ones. A mechanical appliance for producing similar movements must have a fixed part from which motion proceeds, and it is apparent that the more perfect the fixation is, the greater will be the power of the movable portion of an apparatus. For this reason I have added a crutch-head with shoulder-strap, as the straps and buckles of the armlet, *M*, alone do not fix the upper segment as firmly as desirable, because the mass of muscles surrounding the humerus slides freely on the bone. Even if the plaster-of-Paris bandage, or some other form of fixed dressing, were used to attach the upper segment to the arm, the same objection and defect would exist. But, with a crutch-head in the axilla, held in place by a strap around the shoulder, absolute fixation is obtained.

It will be noticed in the description of the apparatus that both the rubber webbing, *W*, and the buckle, *C*, at the end of the lever are pivoted. By this arrangement they adapt themselves automatically to the angle of tension, which is constantly changing, as the forearm segment comes down.

The whole apparatus is much more simple than might be inferred from its description. Nothing could be more simple and uncomplicated than the mechanism which controls the movement of the apparatus. After the tension is applied it does its work automatically. The principle upon which the compound joint is constructed may be utilized in many ways for other joint appliances. Thus, with a slight modification, it may be adapted for overcoming angular flexion of the knee, with outward rotation of the head of the tibia, or in cases of flexion of the hip combined with adduction or abduction of the thigh.

Correspondence.

LETTER FROM LONDON.

The Report of the Clinical Society's Committee on Myxœdema.—The Value of the Tubercle Bacillus in Diagnosis and Prognosis.—The Financial Position of the London Hospitals.

LONDON, *May 29, 1888.*

AFTER four years of pretty constant labor the myxœdema committee of the Clinical Society have announced the termination of their investigations by sending in a report, the chief conclusions of which were briefly enunciated at the last meeting of the society by Dr. Ord, the chairman of the committee and the leading spirit in its appointment. The report will be published as a separate volume concurrently with the next volume of the society's "Transactions," and it is said that it will be of about the same bulk; till then we shall doubtless have to content ourselves with the summary of the results which I have no doubt will appear in the next number of our medical journals. The main facts of that summary are that myxœdema is a distinct and definite disease, and that destructive change in the thyreoid gland is a constant factor. No explanation was offered of the much greater frequency of the disease among women, though allusion was made to the fact; cachexia strumipriva and sporadic and endemic cretinism were declared to be essentially the same disease as myxœdema. A very large mass of evidence relating to the effect of the removal of the thyreoid gland was sifted by the committee, leading them to announce definitely that this operation is followed by the development of myxœdema. Cases in which this has not occurred were explained on the hypothesis of the existence and development of supernumerary thyreoid glands. The committee also included an experimental inquiry as to the effects of the removal of the thyreoid in monkeys, and found that myxœdema was always produced in a most typical form. The Clinical Society has done good work before in thoroughly investigating diseases by means of a small committee—witness the reports on spina bifida and Charcot's joint disease, to quote only the most recent—but this report will completely eclipse all previous ones, both for its exhaustive character and because it establishes in an indisputable manner the identity of a disease the separate existence of which has not hitherto been always admitted. The late Dr. Mahomed, for instance, held to the belief that myxœdema was nothing more than chronic nephritis, and others shared his views.

Dr. Broadbent, the president of the society, in thanking the committee for their labors, paid a well-deserved compliment to Dr. Ord, and foretold that the disease in future would be inseparably connected with his name, in recognition of the great advance in our knowledge of it through his labors. For, though Dr. Ord was not the first to describe a case (priority belonging to Sir William Gull for his paper before the Royal Medical and Chirurgical Society, on "A Peculiar Cretinoid State supervening in Adult Women"), still Dr. Ord was the first to recognize all the essential features of the disease and to carry out the investigation in regard to the skin from whence the disease derives its name. I believe it is a fact that nothing of any importance in regard to the disease (excepting as to the results of removal of the thyreoid gland) has been made out elsewhere that had not already received notice in one of the many papers on this disease contributed to the Clinical Society.

Dr. Percy Kidd and Dr. Taylor have lately made known the results of a prolonged investigation as to the value of the tubercle bacillus in diagnosis and prognosis. In regard to the former, in many cases where the physical signs were undeveloped or were masked by emphysema or bronchitis, the discovery of the bacilli in the sputa was of great aid in diagnosis, and also in some cases of rapid wasting without any physical signs in the chest. They pointed out that it was a distinct advantage to be enabled to give a definite diagnosis early instead of waiting for physical signs to develop. In reference to prognosis, they did not lay much stress upon the bacilli; they had not found that a large number necessarily indicated a rapidly increasing disease or a small number a chronic or actually stationary condition, and in this they were supported by most of the speakers, though one gentleman was in favor of having the sputa sent up to him every week in order that he might arrive at a prognosis from the number of the bacilli, and he even thought that a prognosis might be given though the patient had never been seen.

The appeals from the hospitals for money are more numerous and more importunate than ever, and yet many of them are rebuilding or trying to, or else enlarging their already existing buildings. In face of these facts, a letter in one of the daily papers of last week is worthy of attention. The writer shows that there are now seventy-three hospitals in London, an increase of twenty-one in the last nine years. Three of these only are endowed, and only one is able to carry on its work without extraneous aid, viz., St. Bartholomew's. Guy's has lately, as is well known, made a great appeal to the public, and St. Thomas's has for some years aided its income by giving up a portion of its accommodation for a pay hospital. The others are all more or less in difficulties, some of them almost on the verge of bankruptcy, and many of them, especially the special ones, are quite unnecessary, but no one knows quite what the remedy is, how it is to be applied, or who is the proper person to apply it.

The Vaginal and Uterine Lochiæ.—The "Lancet" says that "Dr. Albert Döderlein, of Leipsic, has published some researches on the bacteriology of the lochial discharges of women in both normal and diseased puerperal states. He finds that the vaginal discharge must be examined separately from that which originates within the uterus, the clinical importance of micro-organisms being very different in the two cases. The vaginal lochia always contains a multitude of germs of various kinds, and, if introduced into the bodies of animals, is capable of producing abscesses. The uterine lochia, on the other hand, contains in the normal puerperal condition no germs whatever. When these appear, or at least soon after their appearance, a rise of temperature occurs, and, when this latter has fallen, the lochia is again found free from germs. Its removal appears to be due to increased secretion and separation of pus cells. Healthy uterine lochia may be introduced into the bodies of animals without causing any harm; but, when there is fever and it contains germs, septic symptoms in the animals are produced. In some cases not merely germs but streptococci have been found in the uterine discharges of patients with puerperal fever."

Urea Center.—"In the animal economy centralization is carried to its most extreme degree. It is certain, from Brown-Séquard's experiments, that there exists a center, irritation of which can suspend the chemistry of the body, making the blood in the veins flow red and reducing the temperature of the body. MM. Sée and Gley, experimenting on dogs with a view to producing glycosuria, caused azoturia by irritating the central end of the divided right vagus with a mixture of glycerin, water, and lycopodium injected into that part of the nerve after section."—*Lancet.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. Appleton & Co.

Edited by
Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 16, 1888.

THE UNTOWARD EFFECTS OF SACCHARIN.

The general impression seems to be that saccharin is innocuous, and this impression has doubtless been materially supported by a report made to the Medical Society of Berlin, in April, 1886, by Professor Leyden, and by a sort of certificate of his, widely distributed by the manufacturers of saccharin, Fahlberg, List, & Co., to the effect that even the prolonged use of the substance gives rise to no inconvenience. In general terms, this has been the experience of most observers, but many of them add that occasionally a case is met with in which saccharin disagrees. Dr. Stadelmann, of Heidelberg, has experimented with the product, at the request of the manufacturers, and has reported that, out of eleven persons, from fifteen to thirty-five years old, to whom he gave saccharin in daily quantities of from forty-five to seventy-five grains for two or three weeks at a time, nine experienced no unpleasant effects, while two suffered with nausea, an excessive sensation of weight in the stomach, and loss of appetite.

Dr. Worms has made a communication on the subject to the French Academy of Medicine, an extract from which is given in the "Revue générale de clinique et de thérapeutique." After citing the above-mentioned facts, he gives brief notes of the cases of four diabetics who used saccharin by his advice, all but one of whom were soon compelled to discontinue its use, on account of the occurrence of dyspeptic symptoms—nausea, a sense of weight in the epigastrium, loss of appetite amounting to absolute loathing for food, and in one instance a constant sugary taste in the mouth. Admitting that his observations are not numerous enough to justify much in the way of generalization, he nevertheless thinks it must be admitted that a certain proportion of diabetics can not bear the use of saccharin for sweetening their tea and coffee longer than eight or ten days at a time. Obscure as the problem of diabetes is, the disease comprising innumerable varieties, as regards both the symptoms and the pathogeny, there is, he remarks, one therapeutical rule that must be observed in all cases—that of maintaining the integrity of the digestive functions. It is better for a diabetic that he should excrete a little more sugar and assimilate his food than that he should pass less sugar and still lose ground. Moreover, many diabetics suffer but moderately from foregoing the use of sugar, and it may be said provisionally that they should not be permitted to use saccharin in larger amounts than from three quarters of a grain to a grain and a half daily, and then only so long as it does not give rise to any digestive disturbance. It is usually not until after the substance has been used for from ten to fifteen days that it manifests its evil influence, appearing to accumulate in the system until then.

MINOR PARAGRAPHS.

THE PRACTICE OF LICKING SORE EYES.

At the recent annual meeting of the *Société française d'ophthalmologie* a curious communication was made by Professor Costomiris, of Athens. It seems that ever since the days of Æsculapius the Greek populace have practiced licking sore eyes as a method of cure. For this important office a person is insisted upon who has a clean mouth and good teeth and is not a smoker. If it is a girl, she must not operate during her menstrual period. The lickers must commence work before eating, and they are required to wash out the mouth carefully and then chew a certain quantity of *Galega officinalis*, to take away all germs from the tongue. Dr. Costomiris has watched the practice for some seven years and found the results very satisfactory in a number of cases of opacities of the cornea, and in keratitis, parenchymatous and diffuse, also in chronic ulcers; so that he recommends it. Very often a member of the family is engaged to do the licking, as it is not easy to get outsiders. The practice may have arisen from seeing animals do the same in cases of eye troubles, and from the popular belief in the efficacy of saliva against wounds. Is it that the covering of saliva keeps out the microbes from the air?

THE DISINFECTION OF BEDDING AND CLOTHING.

In Paris the importance of destroying micro-organisms in every shape and wherever found seems ever increasing, as shown by the effort lately made in this direction by the directors of the great government loan offices called the *Mont de piété*. A large number of the poor classes pawn their bedding, and all sorts of mattresses, pillows, and other articles are received at the loan offices and placed in the storehouses, and, when we know that one of the number may be contaminated with the germs of some disease, and transmit it to the whole lot and cause an epidemic, as has been proved, the importance of disinfection of these goods will be recognized. It is only too common in all countries to see poor people, after a long illness, compelled to pawn their goods, and our local law-makers together with those interested in hygiene may see their way to purifying these goods or insisting that the pawnshop people do it, by the means used in Paris. This is by superheated steam. A large cylinder to put the goods into is mounted on wheels, looking for all the world like a steam boiler or a fire-engine. This can be drawn by a horse wherever it is wanted, as was done lately during an epidemic of sweating sickness in the country, and the goods are placed in it for disinfection. During the few months that this plan has been working thousands of old mattresses, pillows, covers, and clothes of all sorts have been steamed, and it is beyond question that millions of the invisible and dangerous microbes have been destroyed, and that another great step has been taken toward the millennium of cleanliness, and therefore health, in modern cities.

THE TREATMENT OF WHOOPING-COUGH.

Dr. R. S. Thomson lately read a paper before the Medico-chirurgical Society of Glasgow on the use of nitric acid, ergot, and chloral in the treatment of whooping-cough. According to an abstract published in the "Glasgow Medical Journal," he had observed benefit only from chloral, and that not in reducing the number of the paroxysms, but in mitigating their severity. In the discussion, many remedies were spoken of, and belladonna seems to have acted more favorably than any of the others alluded to, although it is worthy of remark that one of the speakers reported that, while in one epidemic every patient had recovered rapidly under its use, in another it had appeared to be of no benefit at all—wherefore he had come to the conclusion that there was no specific for whooping-cough, an opinion that seems to have been shared by most of the speakers. Some of them even thought that the disease had to run its course, like an essential fever.

THE LATE DR. AGNEW.

Seldom have more laudatory words been spoken even of the dead than those which Dr. T. Gaillard Thomas uttered in his memorial address on the life and character of the late Dr. Agnew at the last meeting of the Academy of Medicine, and rarely have such words been so well deserved. A large meeting listened with satisfaction and entire approval. It is not often that the sense of privation comes so keenly to a great body of men as has been the case with the medical profession over Dr. Agnew's death. As with the profession, so it has been, in hardly lesser degree, with the community, for few men who were not actually public officials have ever so closely identified themselves with all that was for the interest of the general public or worked so faithfully and intelligently for its advancement.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 12, 1888:

DISEASES.	Week ending June 5.		Week ending June 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	7	2	2
Scarlet fever	173	38	153	33
Cerebro-spinal meningitis	3	2	4	3
Measles	233	20	208	23
Diphtheria	152	67	167	40
Small-pox	15	3	8	4

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 27 to June 9, 1888:*

White, Robert H., Major and Surgeon, will report to regimental commander, 1st Infantry, to accompany headquarters, field, staff, band, and battalion of 1st Infantry to Santa Barbara, Cal., on or about June 15, 1888, to remain until about September 1, 1888. S. O. 25, Division of the Pacific, May 28, 1888.

Cowdrey, S. G., Captain and Assistant Surgeon, ordered to accompany the troops of the 16th Infantry from Fort Bliss, Texas, to Fort Douglas, Utah Territory, as medical officer, will return to his station upon the completion of said duty. S. O. 54, Department of Texas, May 19, 1888.

Appel, D. M., Captain and Assistant Surgeon, upon arrival of Captain J. V. Lauderdale, Assistant Surgeon at Fort Davis, will proceed to Camp Peña Colorada, Tex., for temporary duty at that camp; and upon return of First Lieutenant H. S. T. Harris, Assistant Surgeon, to Camp Peña Colorada, Assistant Surgeon Appel will return to Fort Davis. S. O 57, Department of Texas, May 28, 1888.

Kean, J. R., First Lieutenant and Assistant Surgeon, will accompany Troop C, 9th Cavalry, from Fort Robinson, Nebraska, to Fort Du Chesne, Utah, and return with Troop B, 9th Cavalry, to Fort Robinson. S. O. 39, Department of the Platte, May 19, 1888.

Morris, E. R., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 61, Department of Arizona, May 28, 1888.

Finley, James A., Captain and Assistant Surgeon. Granted leave of absence for six months on surgeon's certificate of disability, with permission to leave the Division of the Missouri. S. O. 129, A. G. O., June 5, 1888.

Benham, Robert B., Captain and Assistant Surgeon, is relieved from duty at Fort Du Chesne, Utah, to take effect upon completion of the duty assigned him in Par. 2, S. O. 33, c. s., Department of the Platte, and will then proceed to Fort Laramie, Wyoming, reporting to the commanding officer for duty at that post. S. O. 44, Department of the Platte, June 4, 1888.

Pilcher, James E., First Lieutenant and Assistant Surgeon. Detailed as member of board of medical officers appointed by S. O. 108, A. G. O., May 10, 1888, to meet at U. S. Military Academy, West Point, N. Y., to examine candidates for admission to the Academy, etc., vice Major Robert M. O'Reilly, Surgeon, relieved. S. O. 128, A. G. O., June 4, 1888.

Cherbonnier, A. V., Captain and Medical Storekeeper. Granted leave of absence for four months on surgeon's certificate of disability. S. O. 133, A. G. O., June 9, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending June 9, 1888:*

Magruder, A. F., Surgeon. Detached from the Yantic and granted sick leave.

Bates, N. L., Medical Inspector. Ordered to the Richmond.

Kidder, B. F., Medical Inspector. Detached from the Richmond, and to wait orders.

Mackie, B. F., Surgeon. Detached from Naval Examining Board preparatory to sea service.

Heyl, T. C., Surgeon. Ordered to the Receiving-ship St. Louis.

Streets, T. H., Surgeon. From the St. Louis, and to Medical Examining Board as Recorder.

DuBose, W. R., Passed Assistant Surgeon. From Naval Hospital, Norfolk, and to the Jamestown.

Wells, Howard, Passed Assistant Surgeon. From the Jamestown, and to the hospital, Chelsea, Mass.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending June 9, 1888:*

Bailhache, P. H., Surgeon. Detailed as chairman, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

Fessenden, C. S. D., Surgeon. Detailed as member, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

Purviance, George, Surgeon. Detailed as recorder, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

Society Meetings for the Coming Week:

Monday, *June 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *June 19th:* Colorado State Medical Society (Colorado Springs); New Hampshire State Medical Society (Concord); New York Academy of Medicine (Section in Theory and Practice of Medicine); Medical Societies of the Counties of Kings, Washington (annual), and Westchester (annual), N. Y.; Ogdensburg, N. Y., Medical Association; Baltimore Academy of Medicine.

Wednesday, *June 20th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Medical Societies of the Counties of Alleghany (annual) and Tompkins (annual—Ithaca), N. Y.; New Jersey Academy of Medicine (Newark).

Thursday, *June 21st:* Dakota Medical Society (Redfield); Minnesota State Medical Society (St. Paul); New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *June 22d:* New York Society of German Physicians; Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *June 23d:* New York Medical and Surgical Society (private).

Letters to the Editor.

HYDROGEN GAS AS A MEANS OF DIAGNOSTICATING PENETRATING WOUNDS OF THE INTESTINES.

St. Louis, Mo., *May 22, 1888.*

To the Editor of the New York Medical Journal:

Sir: In the issue of your Journal for the 19th inst., under the caption "A New Means of Diagnosticating Penetrating Wounds of the Intestines," it is stated that Dr. Nicholas Senn "startled the Surgical Section of the American Medical Association with some experiments intended to show the value of hydrogen in the diagnosis of such wounds." Then follows a brief statement that the gas was given to dogs by enemata and ignited at their noses; that a stab-wound was inflicted, and the gas was ignited at the point of puncture, etc.; also that "the innocuousness of the gas itself was affirmed."

That hydrogen gas is not poisonous is, of course, well known, but, while toxicologically inert, its equally well-known *explosive* properties, when mixed with atmospheric air and some other gases, should not be forgotten. My object in this short note is to direct attention to this powerfully explosive quality of these mixed gases, to the liability of such mixture occurring within the body, and to the danger of igniting the gas issuing from a wound, as seems to have been recommended.

John Vansant, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of March 1, 1888.

The President, Dr. A. Jacobi, in the Chair.

Should we treat Syphilis during the Primary Stage?—Dr. Edward B. Bronson read the paper (see page 309).

Dr. E. L. Keyes said he should have been much more interested if Dr. Bronson had given the results of the treatment which he had suggested.

Dr. Bronson said that he had suggested the method only on theoretical grounds; that his own experience offered no conclusive proof for or against its efficacy.

Dr. Keyes thought that it deserved investigation. He had not tried it, but was willing to do so should evidence be given of its practical value. His own impression had always been that the disease became general from the time that the poison was introduced, and before the appearance of the primary lesion, which occurred only after a period of incubation. Perhaps he could not prove the correctness of such a view, but he had seen no satisfactory proof that it was erroneous. He cited one case out of several in which excision of the initial lesion soon after its appearance had failed to eradicate the disease; the eruption had followed six weeks later, and had been of a most pronounced type. The inefficacy of cauterization had been well illustrated in Berkeley Hill's case. The objection to the use of mercury before positive symptoms of syphilis had developed was that it threw more or less discord into the whole subsequent life of the patient. The presence of a sore, called the initial lesion, was not sufficient to confirm the diagnosis of syphilis. He had known persons who had been supposed to have had the primary lesion of syphilis who had been placed on mercurial treatment before the diagnosis could be confirmed by secondary lesions; the patients had subsequently had some skin eruption, which had been incorrectly attributed to syphilis, and specific treatment had been continued for months and years, yet they had never had syphilis at all. The use of mercury on the appearance of a supposed primary lesion might interfere with the regular development of secondary symptoms, and if these failed to appear, the patient was likely to conclude that the diagnosis was erroneous, that he had not syphilis, and refuse to continue treatment.

Dr. R. W. Taylor thought that the history of the syphilitic sore, as pictured by Dr. Bronson, in the light of analogical evidence in such diseases as cancer and tuberculosis and what we were learning every day of the action of bacteria, showed that at first syphilis was a local affection, but, unfortunately, we did not know to what extent it was local. The hyperplasia described by the author formed the initial lesion, but he believed extended experience had shown that neither cauterization nor excision of that lesion would prevent the development of syphilis. Dr. Bronson's object was a most laudable one; if this terrible disease could be strangled at the outset we should be justified in applying every rational means to that end, but the speaker doubted whether it could be done. At any rate, he felt convinced that it could not be done by excision or cauterization. By these measures the top of the infested cells might be removed or destroyed, but others remained which would go on germinating indefinitely. He thought a mother might bear a syphilitic child and escape syphilis herself, the child having acquired the disease from the syphilitic father, but the mother would be liable to contract syphilis subsequently in the usual way; her child would not have given her immunity. As to regional treatment, it consisted chiefly in injections or inunctions of mercury, and it was capable of extended application. When mercury operated immediately, the papules disappeared rapidly. That, he thought, was a fact of importance in the treatment suggested by Dr. Bronson, but there was another fact to be borne in mind—namely, that mercury used hypodermatically in any degree of concentration in the region spoken of, on the thigh and inguinal region, would cause abscesses. He believed with Dr. Keyes that the regular treatment of syphilis should not be instituted until the appearance of secondary symptoms which would enable one to make a positive diagnosis. Treatment begun during the primary stage made after-symptoms disorderly, and, unless they appeared in the regular way, patients were not likely to believe that they really had the disease and would prove intractable. All doubts were removed from their minds when the eruption of the secondary stage appeared; and the sickening smile, which he called the syphilitic countenance, indicated to him that thereafter they would follow the directions of their medical adviser.

Dr. Leonard Weber believed in the advantages of topical treatment in syphilis, but he thought, with the majority of syphilographers, that it was best not to institute treatment during the primary stage.

The President thought that some of the difficulties of the problem could be better appreciated by a comparison of syphilis with some other affections, such as diphtheria, whose mode of action was known. Diphtheria might be either a local or a constitutional disease; it remained longer local when in a situation where there were but few lymphatics, as on the tonsil; it became more rapidly constitutional when situated where there were many lymphatics; and in some cases of diphtheria in the posterior nares the virus entered the blood directly, and resulted fatally before there was perceptible enlargement of the glands.

Dr. Bronson said that he had presented this method of treatment on theoretical grounds, for, although he had practiced it, the conditions had not been such as to offer conclusive evidence either for or against its efficacy. It was hard to say positively during the primary stage whether the patient really had syphilis; it was also difficult to induce him to submit to treatment; and if after-symptoms did not develop, doubt would exist as to whether the disease had been eradicated.

The Treatment of Flat-foot.—A paper on this subject by Bernard Roth, F. R. C. S. E., was read by Dr. V. P. Gibney. The author said that he was glad to comply with the request of his friend Dr. Gibney to contribute to a symposium on the treatment of flat-foot, especially as some of his views had materially altered since he had written the article on this deformity in Heath's "Dictionary of Practical Surgery," more than two years ago. He defined flat-foot as a falling down of the normal arch of the foot, which might be so slight as to escape notice except from the discomfort it caused, or so severe that the whole tarsus was as convex inward as it ought to be concave, and that the foot was so everted that the internal malleolus touched the ground while the outer border of the foot was raised, with the sole directed outward, as in some cases of infantile paralysis. Pain and much deformity were not always coincident. Flat-foot was a very general term, and required some clinical classification if surgeons were to come to any agreement with regard to treatment. He thought the best classification was that which he had proposed several years ago, namely: 1, cases in which it was possible to restore the foot completely by passive manipulation without any force exerted by the surgeon, or by making the patient stand with the heel raised; 2, cases in which the tarsal bones had become more or less fixed in their displaced positions by shortened ligaments and tendons, osseous deformity, and fibrous or osseous ankylosis, which required forcible manipulation to restore the arch; 3, intermediate cases.

In order to arrive at a better understanding of the treatment of flat-foot, the author briefly discussed the causation. He quoted Le Gros Clark to show that the various muscles of the foot were so attached as to help preserve the plantar arch. All infants, Mr. Roth said, on commencing to walk were normally flat-footed, whereas after they had run about a few months, and the leg muscles had become developed, a perfect arch was formed. Anything which tended to weaken the general muscular system during the years of growth would also predispose to flat-foot. Hence its prevalence among those who had lateral curvature, and also in those suffering from knock-knee. When the muscles failed to do their work, undue strain was thrown upon the tarsal ligaments and they gradually yielded. As long as no osseous malformation had developed, more or less complete restoration to the normal condition was possible. The production of osseous deformity in the foot was brought about in the same way as in knock-knee.

In the treatment there were two indications: 1. To restore and preserve the normal plantar arch. 2. To strengthen the muscles which tended to produce and preserve the normal arch. Thus mechanical means for replacing and keeping up the arch, and therapeutic methods for strengthening the weak tibial muscles, must be discussed. In the first and third class of cases a boot or shoe should be worn broad enough across the metatarso-phalangeal articulations; the heel should be low and broad. For the last eighteen months he had discarded pads, and no longer insisted upon laced boots being worn. Instead of a pad, which tended to irritate the tender tarsus, he employed an increased thickening of the sole opposite the ball of the great toe and on the inner margin of the heel, after the method of Mr. H. O. Thomas. The increased thickness of the sole was from one fourth to one half an inch, according to the severity of the case. This wedge-shaped sole and heel could be applied to boots and shoes already made. In class two, in which *brisement forcé* was required, he would do this by Thomas's club-foot wrench, and afterward apply a suitable splint until symptoms of traumatism had disappeared, after which he would treat the case as in the classes one and three.

As to therapeutic measures for strengthening the tibial muscles, he knew of no better measure than walking on the toes with the heels raised an inch or so, but not raised too much. The author then described certain special gymnastic exercises for developing the muscles which tended to preserve the plantar arch. In all cases attention should be paid to the general health. Such severe treatment as the removal of a wedge-shaped piece of bone from the tarsal arch did not appear to him justifiable. He had not seen a case in which this treatment offered reasonable probability of permanent benefit. The effect of the treatment which he advocated began to be felt by the patient in a week or two. Seldom did he see cases in which all pain and discomfort did not disappear in three or four weeks; in some it disappeared within three or four days. For a cure, several months or a year or more were necessary.

Dr. Ridlon thought that pads and springs worn under the foot acted in a harmful rather than in a beneficial way, for, while they might relieve the patient of pain and tenderness for a time, yet they did not tend toward a cure, and when the patient once began their use he found it necessary to continue it. The treatment which some had resorted to in this country, of stretching the gastrocnemius muscle, was founded on the idea that shortening, spasmodic contraction, of that muscle had something to do with the causation of the deformity, an entirely erroneous view in his opinion. The deformity occurred before the contraction of the gastrocnemius. The patient might have electricity, massage, and flagellation applied across the arch, but he certainly ought to have the Thomas shoe and gymnastics. The gymnastics included walking on the toes.

Dr. A. M. Phelps thought that putting a pad and spring under the arch was not rational. He would put the patient under an anæsthetic, force the arch into place, put on a splint, and subsequently, if necessary, repeat the operation. He spoke of an adjustable apparatus with which the foot could be thrown into a position best adapted for preserving the plantar arch while sustaining the weight of the body. In certain cases of valgus in which there was lack of muscular development he would employ massage, electricity, etc.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN ORTHOPÆDIC SURGERY.

Meeting of May 18, 1888.

Dr. Lewis A. Sayre, Chairman.

A Club-foot Apparatus.—Dr. Shaffer showed a new apparatus for the treatment of club-foot by means of pulling instead of pushing the foot into position, the center of motion being about an inch to the outside of the cuboid bone. He also showed a patient with double congenital talipes varo-equinus. One foot had been left untreated, and the other had been treated by means of this apparatus and had been brought into very excellent position.

The Chairman remarked that he considered the shoe an improvement on any club-foot shoe that he had yet seen.

Partial Luxation of the Knee Joint.—Dr. Ketch showed a patient with this condition, apparently due to rupture or congenital absence of the crucial ligaments, allowing of motion of the tibia forward on the femur, also of a rotary motion in the joint.

The Result of Antiseptic Treatment of Abscesses connected with Disease of the Hip Joint.—Dr. R. H. Sayre presented two patients and said that there was nothing remarkable about them, and his only object in presenting them was because, some time before, a paper had been read before the section by Dr. Judson advocating non-interference with abscesses connected with joint diseases. It had been said in that paper that the best plan was to let abscesses alone, that pus was not of any consequence, that, sooner or later, an abscess would burst spontaneously, and that after it had opened spontaneously it would keep on running for a longer or shorter period, and that the result was no better when it was opened by the surgeon. To sustain this theory twelve cases had been cited by the author of the paper in which the abscesses had finally dried up and the patients got well, some with ankylosis, some with mobility of the joint.

In these twelve cases the average number of months the abscesses continued to discharge had been fifteen. It was said the best thing to do for these abscesses was to let Nature open them, and let them "drip till they got tired of dripping."

Dr. Judson had said,* "Unless the stream is too copious it is best to leave the opening uncovered, relying on evaporation and frequent change of under-clothing," and another gentleman had advocated, in all seriousness, the use of rubber drawers tightly fastened about the knees to catch the discharge.

It had been the general opinion of the members of the section that non-interference was best, and the speaker was very glad that Dr. Stephen Smith had remarked at that time that it was not well that such ideas should go forth from that meeting as the general opinion of all the members; that he, for one, did not believe that pus was a beneficial thing in the body, as some gentlemen thought, but considered that the patient was better and healthier when the pus was evacuated and the wound healed up. In this opinion the speaker fully concurred. In many of these cases, where the abscess was large and tense, the mechanical pressure of the abscess itself produced a great deal of pain, which was relieved when it was opened. He thought it surgically correct, when there was an abscess of large size that gave rise to pain and elevation of temperature, to open it, and have it thoroughly cleaned out, drained, and closed, and if it was once thoroughly cleaned out there was no possibility of its not healing up.

Speaking of the first patient presented, he said that the little girl had had commencing hip disease when six years of age. She was now about seven years and a half old. The tenderness had increased last winter, and she had cried a great deal at night and had had all the symptoms of an acutely inflamed joint. On the 20th of March the speaker's brother had opened the abscess, scraped it out thoroughly, and irrigated it with a solution of bichloride of mercury. After the cavity had been scraped out and some diseased bone removed (it did not appear in this instance to connect with the joint) it was then washed with chloride of zinc, twenty grains to the ounce, drained, and sewed up. The wound was dressed again on the sixth day and the drainage-tubes were removed. The wound healed by first intention and had remained closed. Since then she had not had any pain at night or the slightest discomfort. She was still wearing the long hip splint. The other case was that of a little girl whom he had seen last autumn for the first time. She had been seen in July last by a surgeon of this city who had previously treated her sister for hip disease. He had seen her next in September, when the disease had made sufficient progress for him to make a positive diagnosis of hip disease, and he then advised the parents to have the joint exsected. They had objected to this and had brought the child to the speaker, who had advised instrumental treatment. The leg at that time had been flexed and everted, and there had been marked spasm of the muscles. She had been excessively tender over the joint and had cried all night with pain. These symptoms had subsided after the application of the splint. About February a swelling had appeared and she had become once more restless at night, and had lost her appetite.

The abscess continued to enlarge and he had thought it best to open it, which he had done on the 5th of April, scraping thoroughly, removing some softened bone at the lower surface of the neck of the femur, washed it with a sublimate solution, drained it with two tubes, and dressed it antiseptically. On the fourth day he had removed the drainage-tube and found the wound had healed, except where the drainage-tube had been. There was now a small granulating surface where one tube was, and a little oozing where the dressing stuck to one part of the incision. There was now a certain amount of motion in the joint. The child slept comfortably, did not cry as before, and had no pain or discomfort. The speaker thought that she was a good deal better now than she would have been if the abscess had been let alone. She still wore the long splint.

He did not present these cases as being novel or uncommon, but simply to emphasize the protest that he wished to raise against allowing abscesses to discharge for fifteen months on the average, as had been advocated as the most rapid and favorable result to be expected. Dr. Judson had found that those cases in which he had incised had run about the same course as those left to nature, and naturally, as he simply anticipated nature somewhat in the time of opening and did not clean the cavity, whereas, if the abscess was freely opened and thoroughly cleansed so that no diseased tissue remained behind, it would heal promptly and thoroughly.

Dr. Taylor said that he was very glad to hear this method of operating on abscesses advocated by Dr. Sayre. He had always made it a practice to open abscesses, but not to scrape them out. That was new in his experience. In a great many cases where they were freely evacuated and closed up at once they did not open again; in some cases, however, they did. In a case brought to him a short time ago there was fluctuation deep down behind the trochanter, and he had advised that the abscess should be freely opened and evacuated. The father of the patient, who was a physician, did not agree with him, and he had taken the boy home and kept him under mechanical treatment. At the end of six months, however, he opened the abscess, squeezed it thoroughly, and closed up the wound, and it healed immediately. The boy had had no symptoms of suppuration since. That was only an instance of what could be done by free incision and evacuation of abscesses. It was to be presumed that scraping would increase the percentage of the cases that would heal.

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* "N. Y. Med. Journal," January 31, 1885, p. 119.

In reply to a question by Dr. Ridlon, Dr. Sayre said that when he first saw one of the patients she had seemed to have all the symptoms of intra-articular disease. There had been apparent ankylosis, remarkable spasm of the muscles, and great tenderness, and the least motion had given intense pain. In fine, she had all the symptoms that he had been accustomed to associate with intra-articular disease. It had also been said to be intra-articular by one of the leading surgeons of this city, who had wanted to exsect the joint. At present there was no spasm of the muscles. The other child had had her leg flexed in the typical position of the third stage of hip disease, and had been so sensitive that she could hardly be touched. At the present time she had no pain, but undoubtedly there was disease inside the capsule of the joint.

Dr. N. M. Shaffer said that his experience in the treatment of chronic abscesses had been somewhat extensive. The first five years of his student and professional life had been spent with Dr. Knight, who had followed the utmost conservatism in his plan of treatment of abscesses. During the five years that he had been connected with the Hospital for Ruptured and Crippled he did not think he had opened more than one abscess a year. When he left the service of Dr. Knight he became convinced that the treatment of abscesses had been under-estimated by him, and he had immediately rushed to the opposite extreme, and had opened every abscess that could be opened with safety to the patient. He had now come to consider abscesses in joint diseases very like the condition of joint diseases themselves. He thought it required a good deal of judgment to determine what kind of abscesses should be opened and what kind should not. He considered it bad policy to open an abscess that connected with a suppurating joint, even under the best antiseptic precautions. He had had considerable experience with opening abscesses under antiseptic precautions, and, after keeping up the dressing for months, he had found that the abscess ran the same course as if no antiseptic dressing at all had been applied. When that point in diagnosis had been reached that would enable us to tell what abscesses were intracapsular and what were extracapsular, he thought we should make a very great advance in the treatment of joint diseases. He agreed to all that Dr. Sayre had said, if the abscesses were extracapsular, but not if they were intracapsular.

Dr. Mary Putnam Jacobi remarked that she would like to ask the opinion of the members present in regard to the treatment of these abscesses by the trocar and cannula, and injection of the abscess cavity with a solution of iodoform in alcohol.

Dr. S. Ketch said that he had been present at the meeting of the orthopædic section to which Dr. Reginald Sayre referred, and there was one thing particularly at that meeting which he thought to be of some practical importance, and that was the fact that all the general surgeons present—and there was quite a number—were unanimous in their opinions that all abscesses, whether they were intracapsular or extracapsular, should be opened at once. On the other hand, the orthopædic surgeons were more conservative in their opinions regarding the opening of abscesses, and it had struck him that a great deal of this was due to the fact of the difference in the treatment pursued by the general and the orthopædic surgeon. The general surgeon was called in to do the operation, the orthopædic surgeon was intrusted with the care of the case for a very trying period, and it seemed to the speaker that the protection of a joint by an apparatus had a great deal to do with the modification of the course of the abscess. He thought that abscesses would run a more benign course when the parts were protected than when left to non-mechanical treatment. His personal experience with the opening of abscesses had been a very peculiar one. He had been taught by Professor Sayre that abscesses, as a rule, that presented any indications should be opened as soon as possible. When the antiseptic system became better known he had opened these abscesses under the strictest antiseptic precautions, and the results had been very satisfactory. They were undoubtedly extracapsular, and pursued the ordinary course, extending over many months, with more or less discharge. He did not now think it a good plan to open all abscesses indiscriminately.

Concerning intra-articular injections he had had no personal experience, but he thought that they had not yet received the attention from American surgeons which they deserved.

The Chairman said that it seemed to him that the whole of this subject could be settled very easily by the application of a little practical common sense. As Dr. Ketch had said, he had taught him when abscesses existed to get rid of them at once. If the abscess would disappear under proper treatment, it should be let alone, but, if it went on from bad to worse, it should be opened freely from one end to the other and cleaned out thoroughly under the best antiseptic precautions, and there would be no relapses. The reason Dr. Ketch and Dr. Shaffer had had trouble was because they did not do it completely. If an abscess was opened and a particle of dead bone or any other diseased tissue was left behind, there was no end to the trouble that was likely to follow. He was very glad that this subject had been brought up before the meeting, and he regretted very much that he had not been present when the paper referred to was read, but he rejoiced to know there was one man who put his foot on it, for it was a disgrace to the orthopædic surgery of America to allow such statements to go abroad uncontradicted. He wished here to put his emphatic disapproval upon such a course of procedure.

Dr. Shaffer said that he did not wish it to go on record that he did not open abscesses. He had opened abscesses freely. One thing he had observed in connection with this opening of abscesses—that, though the entire disappearance of all symptoms of abscess might have followed, it did not necessarily follow that the disease was cured. He had seen a great many cases where the abscess had closed, but disease had persisted for many years.

On the Advantages of Plaster of Paris as a Spinal Support.—The Chairman read a paper on this subject. (See page 645.)

Dr. Shaffer thought that surgeons were all perfectly agreed as to one point regarding the mechanical treatment of Pott's disease of the spine, and that was the desirability of removing, so far as possible, traumatism from the part affected with chronic spondylitis. The various means of accomplishing this had been subjected to more or less experience by all. He had personally used the plaster jacket in quite a large number of cases and had been somewhat disappointed in its use. He felt that if the position gained by recumbency was maintained, we were apt to do our patient more good than if we subjected him to the increased traumatism secured by suspension. In the application of the plaster jacket in bad cases of Pott's disease we inflicted a certain amount of traumatism every time suspension was applied. If the position gained by suspension was maintained for any length of time, he felt that it would be to keep this traumatism up. If a patient was taken under the arm and lifted up, he was relieved during the time he was suspended; the very moment the force was relaxed an indescribable expression of pain passed over his countenance. Some time since he had made several experiments with the plaster jacket to determine how thick the anterior wall should be in order to support the patient, so as to prevent him from relapsing into the position of the former spinal curves. He had accordingly had the patient suspended, and as soon as the jacket hardened had cut it off and taken its outline. He had then measured the antero-posterior diameter of the jacket and had found that it had increased nearly an inch. He had then applied another jacket and had found that the antero-posterior diameter had increased an inch and a half. In other words, unless the jacket was applied very frequently, it did not maintain the position required by suspension, and the patient, so to speak, sooner or later telescoped down into the jacket.

In another respect the jacket had proved a fallacy; the deformity increased a good deal during the month or six weeks that the patient had it on, as he had found from actual measurement. He would simply say that above the eighth dorsal vertebra the Taylor support far excelled the plaster-of-Paris jacket in his experience, and that was especially true if the apparatus was surmounted by the proper head-support. His conclusion, after considerable experience with the plaster jacket, was that he would prefer to place himself under a competent surgeon who applied Taylor's antero-posterior support rather than the plaster jacket.

The Chairman said, in regard to the traumatism in applying the plaster jacket to which Dr. Shaffer had referred, that it was absolutely impossible for traumatism to occur, provided the surgeon applied the jacket properly and in strict accordance with the instructions he had so carefully given; that the plaster jacket, on the contrary, when properly applied, afforded a perfect relief to every one who had ever worn it, and there was no possibility of restricting the breathing, which was a feature to be objected to in the Taylor brace. A practical demonstration was worth all the theorizing in the world. "Here," said the chairman, "is a gentleman from Hutchison, Kansas, who came to me yesterday to be treated for a chronic inflammation of his knee joint. On examining him, I discovered that he had also suffered from Pott's disease some years before, and had been cured by a plaster-of-Paris jacket which had been applied by a country doctor, and I therefore asked him to come here this evening to illustrate the fact that the treatment could be successfully applied in the most remote sections of the country, and without the aid of any particular specialist. This man is twenty-six years old. He was injured in his back by attempting to lift a heavy weight when he was sixteen years old. In a few months he began to suffer pain in his abdomen, which increased rapidly and was accompanied with severe spasms in his legs and numbness of the same, terminating in eighteen months in complete paralysis of both lower extremities. He remained in this condition, confined on his back in bed, for more than twelve months, suffering intense pain and constant muscular spasms in his legs and the lower part of his abdomen. Blisters, liniments, and various internal remedies were employed by the different medical men who saw him, but without any benefit. After all hope of his recovery had been abandoned, a young physician came to the place, who had seen me apply the plaster-of-Paris jacket at Bellevue. He was called to see the patient, and, after properly suspending him, applied a plaster-of-Paris jacket. From the instant that the patient was properly suspended, the pain in his abdomen and the spasms in his legs ceased and have never returned. In a few days he could sit up, he recovered the use of his legs in about three weeks, and from that time he continued to improve rapidly, so that in a few months he was able to attend to considerable business on his farm. He wore the same jacket for eight months and became perfectly consolidated as you now see him, and, as he says, never suffered the slightest pain or inconvenience from the day the jacket was applied. You observe quite a prominence of the seventh and eighth dorsal vertebræ, but the father says that the 'hump' is not so large as it was before the jacket was put on. How this is, of course, I can not say from personal knowledge; but I do know that, if it had been properly applied before the deformity had appeared, he might have been cured, as I have seen many others, without any hump at all. I simply show the patient to illustrate the fact that a country doctor can cure these cases as well as any specialist."

Dr. Ridlon asked whether or not in the application of the plaster jacket fixation of the spine in the point diseased was aimed at. If that was so, he did not understand why one could not obtain more fixation from the Taylor support. If motion at the diseased area was desired, would it not be better to let the patient go without any dressing at all? If fixation was desired, why was it desired in a tubercular disease of the vertebræ and not of the hip joint?

Dr. Ketch remarked that, admitting the superior advantages of the plaster-of-Paris jacket in certain localities, he did not believe that its application was such an absolute matter of ease as had been stated this evening. He believed that the plaster-of-Paris jacket and many other braces owed their effectiveness to the person who applied them. Possibly the chairman could get a great deal more benefit out of plaster of Paris than others who applied the same material. He was quite sure that those who were in the habit of applying Taylor's apparatus could get better results from it than those who were not, but who trusted the application and care of the instrument to the instrument-maker. From his own experience, he was sure that the plaster jacket afforded an excellent and ready means of treatment for disease located in the lumbar region. He doubted very much if the plaster-of-Paris jacket, or any other brace, would stop deformity in that most formidable portion of the spine—the mid-dorsal region.

Dr. Taylor said that he had been very glad to hear from the principal advocate of the treatment of spinal deformity by the plaster-of-Paris jacket, and he supposed the furore excited by its published announcement had seldom been equaled by any medical discovery. It had emphatically drawn the attention of the public and profession to the fact that Pott's disease and lateral curvature could be treated, and if the chairman had accomplished nothing but this, he thought that we should be very much indebted to him for it. We had had patients with lateral curvature and Pott's disease settling down to the full extent of their deformity, with abscesses, paraplegia, and the various complications of the disease, with scarcely a finger raised to help them out of their condition, and there were, he believed, at the present time surgeons in out-of-the-way places who did not know that the treatment of Pott's disease was one of the most successful things in surgical practice when properly carried out. The speaker's experience with the plaster jacket had led him to think that the chairman obtained better results from it than from the Taylor brace, and that he himself would get better results from the Taylor brace. Men must use the apparatus they were most accustomed to. We must be a little cautious in accepting the indorsement of the chairman to-night in regard to the plaster jacket as compared with the verdict of other men.

In von Ziemssen's "Hand-book of General Therapeutics," vol. v, Professor Bush, speaking of the plaster jacket, had said that it was of doubtful utility and should not be employed where more perfect means could be obtained. In England Dr. Reeves also had said that the plaster jacket had proved a disappointment in the hands of English surgeons, both in the treatment of lateral curvature and in that of Pott's disease. The speaker had had no experience in putting on the jacket, but a great deal in taking it off, and from the patients who had come to him he was convinced that many patients went under treatment with very little deformity and came out with a great deal. This must make us think that it was not, as Dr. Ketch had remarked, so easy to apply it as the chairman would have us believe. The treatment of Pott's disease needed the most careful knowledge that could be given to it, and it could be acquired only by long practice. He did not believe that a country practitioner could carry a patient successfully through Pott's disease with a plaster jacket. Looking at it from a mechanical point of view, if experts in mechanics, not physicians, were consulted, they would tell us that the antero-posterior support was a more perfect mechanical device than the plaster jacket.

Dr. R. H. Sayre remarked that Dr. Shaffer had said that he had found by measurement that the jacket when applied had increased in its antero-posterior diameter from an inch to an inch and a half in two weeks. If the jackets did so they undoubtedly did not give the spine proper support, and had not been applied as they should have been. The jacket should retain its shape, and it ought to be so applied as to do so. Dr. Shaffer was mistaken in saying that suspension caused traumatism. All patients with acute Pott's disease were very apt to make self-suspension by putting their hands on a chair, and so making extension of the spine. By the suspension apparatus this was done for them, and if the jacket was properly applied, instead of sinking into the original position and receiving a traumatism, as Dr. Shaffer had said, they would be retained in the improved position, which was a source of comfort to them. If they did not have enough of traction on the head to prevent the reflex spasm, it was evident that the most favorable condition for a cure had not been secured.

Dr. Lacken, of Canada, said that he was a country practitioner, and he thought that there was nothing that had been such a boon to patients with Pott's disease as the plaster jacket. He knew of several cases of Pott's disease that had been cured by means of the plaster jacket. He had several plaster jackets in his office, and they retained the same shape they always had.

Dr. R. H. Sayre asked Dr. Shaffer what time elapsed after the jacket was applied until the patient went home?

Dr. Shaffer: About four hours.

Dr. Sayre: Did he have a jury-mast?

Dr. Shaffer: No.

Dr. Sayre said that if he were to apply a plaster jacket on a patient with much deformity he would put on a jury-mast, and if he did not have one he would make the jacket strong enough to prevent the patient's sagging forward an inch and a half. It seemed to him that the patient was allowed to bear his entire weight upon the plaster jacket before it was sufficiently hard to sustain it.

Dr. Shaffer: It was hard and of good quality.

Dr. L. H. Sayre remarked that he thought that he could give a solution to Dr. Shaffer's troubles with the plaster jacket. There was a peculiarity of plaster of Paris that in fifteen minutes it would become absolutely hard, then some time afterward it became a good deal softer. The patient had been put on his feet too soon, and the weight of the body went on to the plaster before it was hard enough to sustain it, and thus produced an antero-posterior increase of an inch and a half. A jacket would not become thoroughly hard in less than twenty-four hours. His rule was, after applying a plaster jacket, to keep the patient an hour or two in the recumbent position until the plaster set, then let him go home and keep the horizontal position, with the jacket exposed to the air until it had become thoroughly hard.

Dr. Ketch asked the chairman what had induced him to add the jury-mast in disease of the lumbar vertebræ. At the time the work on spinal diseases had been published in London (1877) nothing had been said about the application of a jury-mast below a certain dorsal vertebra, which one he would not now attempt to say.

The Chairman said that he was indebted for the suggestion to Dr. S. W. Gross, of Philadelphia. He had stated that fact in all his writings for the past five or six years. In regard to the question of Dr. Ridlon, the speaker would say that the fibrous tissue of the capsule of the hip joint, if kept quiescent, became fibro-cartilaginous and ankylosis occurred. Sir Benjamin Brodie had cited a case where complete ankylosis had occurred in a patient who lay in bed without any disease of the hip joint at all. In the back ankylosis was not a very undesirable thing to get. He had seen some patients with Pott's disease who had recovered with motion in the joint. As for the difficulty of applying the jacket, he knew of two instances where a woman in Charles Street, in this city, whose child he had treated for Pott's disease, went to Nova Scotia and treated two children with a similar ailment from the simple knowledge she had obtained by seeing it done in his office. She had sent to him for the plaster, and last summer Mr. Ward, the artist, had pictured these children as perfectly cured, and with the disease, too, in the mid-dorsal region. It was now four years since this had occurred. This position was also borne out by the remarks of Dr. Lacken (present at the meeting) that any country doctor could apply it properly, while in England McNaughton Jones, Golding-Bird, Durham, Berkely Hill, Keetley, Owens, Oxley, McLeod, Hobart, and others had strongly recommended it, and even St.-Germain of Paris, while censuring it in the first part of his book, said, later on, that he had found it invaluable *after he had learned how to apply it.** The chairman's impression was that Dr. Shaffer and the different gentlemen mentioned by Dr. Taylor would agree with Dr. St.-Germain as soon as they became conversant with the proper way of applying it.

Book Notices.

The Surgical Diseases of the Genito-urinary Organs, including Syphilis. By E. L. Keyes, A. M., M. D., Professor of Genito-urinary Surgery, Syphilology, and Dermatology in Bellevue Hospital Medical College, etc. A Revision of Van Buren and Keyes's Text-book upon the same subjects. New York: D. Appleton & Co., 1888. Pp. xv–704. [Price, $5.]

When Van Buren and Keyes's book on "Genito-urinary Diseases and Syphilis" was issued, in 1874, it at once took its place as a standard text-book. From its date of issue until now there has been no material change made in it. Books, like men, grow old, only more rapidly, and it was high time that a revised edition of this particular book should appear. Dr. Keyes, the surviving author, has given us, not a revised edition only, but practically a new book. The old plates have not been cut and a patch-work book produced, but the book is printed from new plates and shows no sign of patching. The size of the volume has been increased by ninety-six pages, thirty-six additional pages having been given to syphilis alone. The most radical change we find in the chapters devoted to the consideration of stone. As the author states, "Lithotrity is dead, having disappeared from surgery as its brilliant child and successor litholapaxy established its claims." So the three chapters on lithotrity of the old book are left out and a new chapter on litholapaxy takes their place.

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* "Chirurgie orthopédique," pp. 349–374.

The merits of the book are so well known that the reviewer's task is easy. We would note that it has, in this edition, been brought down to date, and contains the mature opinions, frankly stated, of the distinguished author. Throughout it is comprehensive, courteous, considerate, and conservative. Due weight is given to the opinions of others, even though in some cases they may not be in accordance with those of the author; the younger men are treated with as much consideration as the older and more celebrated; and, while the newer bacterio-ætiological teachings are fully stated, the author is not "tossed to and fro, and carried about with every wind of doctrine," but stands fast upon the ground which is already secure. We would specially commend the admirable tone of those sections relating to matters of sexual hygiene, and the wise spirit in which the subjects are treated. The excellent diagnostic tables of the old book are preserved in this. Operations are given in so full a manner that they may be readily understood and carried out. We take great pleasure in commending this work to all practitioners of medicine or surgery as a safe and thorough guide. It is in every way worthy of its author, whom we congratulate upon the successful completion of his task.

The publishers have done their part well—the paper and press-work are excellent. We have noted no typographical errors. The index takes "the snake of learning by the tail," as it is remarkably full.

BOOKS AND PAMPHLETS RECEIVED.

The Physician's Bedside Record, for the Systematic Recording of Clinical Notes and their Permanent Filing for Future Reference. By Gideon C. Segur, M. D. Hartford: The Plimpton Manufacturing Co.

Quand et comment doit-on prescrire la digitale. Par Henri Huchard, Médecin de l'Hôpital Bichat. Paris: D. Berthier, 1888. Pp. 136. [Prix, 3 francs.]

Fourteenth Annual Report of the Secretary of the State Board of Health of the State of Michigan, for the Fiscal Year ending September 30, 1886.

The Causation of Pneumonia. By Henry B. Baker, M. D., Lansing, Mich. [Reprinted from the "Annual Report of the Michigan State Board of Health," for the Year 1886.]

Contributions to Clinical and Practical Medicine. By A. T. H. Waters, M. D., Fellow of the Royal College of Physicians, London, etc. London: J. & A. Churchill, 1887. Pp. iv–195.

Exudative Conjunctivitis. By Alvin A. Hubbell, M. D., Buffalo, N. Y. [Reprinted from "Transactions of the New York State Medical Association."]

Proceedings of the State Sanitary Convention held at Philadelphia, May 12, 13, and 14, 1886, under the Auspices of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. [Extracted from the "Second Annual Report" of the Board.]

Effects of Food Preservatives on the Action of Diastase, Pancreatic Extract, and Pepsin. By Henry Leffmann, M. D., and William Beam, M. A.

Remarks on the Vesico-urethral Erethism peculiar to Locomotive Engineers. By John Blake White, M. D., Physician to Charity Hospital, etc. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Foreign Sketches from Wiesbaden and the German Universities, being chiefly upon Ophthalmological Subjects. By Harold B. Wilson, M. D., Ann Arbor, Mich. [Reprinted from the "Medical Advance."]

The Relation of Alimentation and Disease. By J. H. Salisbury, A. M., M. D., LL. D., Member of the Philosophical Society of Great Britain; Member of the American Antiquarian Society, etc. New York: J. H. Vail & Company, 1888. Pp. xi–332.

Transactions of the Massachusetts Medico-legal Society. Volume I. Number 10, 1887.

Reports on the Progress of Medicine.

NEUROLOGY.

By J. LEONARD CORNING, M. D.

The Treatment of Spina Bifida by Means of the Elastic Ligature.—Parona ("Gazz. med. di Torino") has published three cases of spina bifida treated by the aid of the elastic ligature. In one case this mode of treatment was not marked by fever, and the course of affairs was otherwise uneventful. In the second case success was attained only after the lapse of several days of fever. The third case terminated fatally, spinal meningitis having set in. The evil effects heretofore witnessed when treatment by the ligature has been resorted to Parona ascribes in part to lack of dexterity in the application or in the after-treatment. With a more perfect technique he feels confident of better results.

Hydrophobia in Children.—Ollivier ("Revue mens. des mal. de l'enfance") points out that the picture of the disease in children, as exhibited clinically and post mortem, coincides in the main with the affection as seen in the adult. As somewhat exceptional phenomena, however, he mentions vesical spasm—manifesting itself in a constant desire to urinate—small cutaneous hæmorrhages accompanied by irritation, and small ventricular hæmorrhages. These symptoms are not, however, to be regarded in any sense as constant accompaniments of lyssa in children. The severity of the symptoms in children, as well as the relatively frequent occurrence of the affection in the young, is to be ascribed largely to the extensive wounds of the hands and face to which they are subjected.

Endocranial Surgery.—Durante ("Lancet") has successfully removed a fibrosarcoma, of about the size of an apple, from the left anterior cranial cavity. The tumor extended across the median line to the right side, and had destroyed the lamina cribrosa, besides pressing the superior orbital plate downward, but without causing perforation. The posterior aspect of the tumor reached backward almost to the sella turcica. Extensive atrophy of the left frontal lobe was present; the posterior wall of the sinus frontalis was driven in, but not broken through, while the dura mater was perforated at the same point. The technical points involved in the operation were simple. An incision was made, extending from the left internal canthus, in an upward and outward direction, until the hair was reached in the temporal region. The flaps having been turned back, the brain was exposed, and a large piece of the cranium removed by the aid of a hammer and chisel. The opening thus made extended downward as far as the superior border of the orbit. Through this aperture the posterior wall of the sinus frontalis was seen to be driven in, as already mentioned, while the dura, at the point of perforation, was firmly adherent to the neoplasm. On further investigation, it was found that the posterior and internal aspects of the tumor were not specially adherent, and it was therefore possible to remove it without much hæmorrhage. What little bleeding there was ceased promptly under simple styptic measures, and drainage was at once established by passing a tube through the opening in the lamina cribrosa to the nasal cavity. The wound was then closed, and at the same time a tampon of iodoform gauze was placed around the drainage-tube. Fourteen days after the operation the patient was discharged cured. As for the symptoms observed previous to the operation, they may be briefly summarized as follows: Slight protrusion of the left eyeball, in an outward and downward direction, of three months' duration; total anosmia of one year's standing; weakness of memory, particularly for names; a feeling of "emptiness," giving rise to a certain incertitude of movements. Finally, sensibility and motility were practically unaffected; in the nasal cavity nothing of an abnormal nature could be discovered, and, in fact, the symptom which had excited the suspicions of those about the patient was an unwonted depression and tendency to silence. It is not surprising that, with such a picture before him, Durante should have diagnosticated a tumor pressing upon the left anterior lobe, and curtailing the function of the corresponding bulbus olfactorius. He also suspected that the superior orbital plate was pressed upon by the neoplasm. As to the significance of the operation, so far as restoration of function is concerned, it is interesting to note that, three months after the removal of the tumor, the depression and disturbances of memory had disappeared, while the sense of smell had returned. On a more careful investigation, however, it was found that only the right olfactorius was capable of performing its function.

Glioma of the Cerebellum; Operation; Death.—Suckling ("Lancet") operated some time since for cerebellar tumor in a girl, twelve years old, who presented the following symptoms: Headache of two years' duration; vomiting, particularly in the morning; weakness of the right extremities of nine months' duration; continual severe pains over the right eye for three months; motor derangements of the eyes, manifesting themselves about four weeks before; expansion of the left pupil; occasional vertigo; oscillating gait, with a tendency to fall forward; inco-ordination, characterized by trembling when voluntary movements were attempted, particularly marked on the right side. Further investigation revealed paresis of the muscles on the left side of the face, and a similar condition of the right extremities; also absence of the left corneal reflex. Movement of the eyeball in an outward direction was impossible on the right and curtailed on the left side. Closure of the left eye was impossible, and the tongue pointed toward the right. Ophthalmoscopic examination revealed marked neuro-retinitis, while nystagmus was at once evoked on attempts to move the eyeballs. The remaining special senses appeared normal. The facial muscles on the left side exhibited the reaction of degeneration. These being the principal points of interest in the case, a diagnosis of cerebral tumor was made. It was further concluded that the growth must be so located as to compress the left facialis and abducens, as well as the left side of the pons. Again, in consideration of the inco-ordination, it was further assumed that the principal seat of the neoplastic tissue must be in the cerebellum. An operation being decided upon, an opening in the occipital bone was made by the trephine in such a manner as to enter the cranial cavity below the sinus transversus. The dura being exposed, it was divided by a transverse incision, when the dark-red cerebellum at once protruded through the aperture. Careful digital exploration was then made, but failed to reveal any unusual hardness. Nevertheless, it was decided to go on, and accordingly a considerable portion of the cerebellum, which seemed to exhibit a suspicious softness, was removed. The amount of hæmorrhage incident to the extirpation was considerable; when it had in a measure ceased, however, a drainage-tube was inserted, the dura united with catgut sutures, and the cutaneous incision closed. The patient remained in a comatose condition for twelve hours, and forty-eight hours after the operation she was dead. The autopsy showed that the left anterior and lower portion of the cerebellum protruded forward in such a manner as to compress the left facialis. A careful microscopical examination revealed a gliomatous degeneration of the whole left lobe of the cerebellum, the pathological changes extending into the central portion of the organ.

[This is the third case of operation of this character that has recently been attempted in which a fatal termination is recorded. With the present technical resources at our disposal, profound operative interference where we have to do with soft neoplastic changes of the cerebral or cerebellar tissue is certainly emphatically contra-indicated.]

Anatomical Modifications of the Optic Nerves in Alcoholism.—Uthoff ("L'encéphale") has recently made a communication on this subject to the Berlin Medical Society. The analysis of five anatomical preparations derived from alcoholics, dead of intercurrent affections, which the author presented at the meeting of the society, presents some interesting features. In the first case there was no visual disturbance, and yet an examination of the section with the naked eye alone revealed the presence of well-marked induration. This induration was nothing more nor less than interstitial neuritis, in which most of the nerve-fibers were preserved. These changes were specially pronounced in the immediate vicinity of the globe. As to the changes observed in three other cases, it is stated that they were practically the same. In the third case, however, the subject presented alcoholic amblyopia of a characteristic type, accompanied by pallor of the external aspect of one disc, while that of the other eye presented a normal appearance. Nevertheless, the autopsy revealed manifest changes in the nerves. As the author took occasion to emphasize, the histological changes which are characteristic of interstitial neuritis consist in a sclerosis of the connective tissue, with concomitant preservation, or at least partial preservation, of the nerve-fibers. In this form of degeneration, disappearance of nerve-fibers only takes place at those points where the sclerosis is exceedingly pronounced. As concomitants of this process may be mentioned proliferation of the nuclei of the connective tissue and formation of new vessels, and finally retraction of the tissue which is the seat of the pathological changes. All these characteristics will serve to distinguish the interstitial form of degeneration from the progressive variety emanating from the visual center, in which there is simple atrophy of the nerve-fibers. As to the frequency of alcoholic amblyopia, the author believes it to be the variety of toxic amblyopia most often encountered. Next in frequency is that mixed form of intoxication in which alcohol and tobacco together figure as causes; and finally we have tobacco alone as the cause of a third variety of intoxication.

The Lesion of the "Myeline" Fibers of the Cortex Cerebri in General Paralysis and Other Mental Affections.—Facher (*ibid.*) has conducted a series of careful studies with a view to determining whether, as affirmed by Tuczek, the disappearance of the "myeline" fibers of the cortex is peculiar to general paralysis. The conclusions arrived at by Facher, based upon thirty-one cases, accompanied by autopsies and careful histological examinations, are as follows: 1. The disappearance of the myeline fibers of the cortex is found in all cases of general paralysis; but the lesion can not be regarded as a special attribute of this affection, for it is found in a large number of other diseases, such as senile dementia, chronic alcoholism, the dementia of epilepsy, etc. 2. In the majority of instances this disappearance of the myeline fibers is to be regarded as a primary lesion involving the parenchyma, and not as a secondary consequence of interstitial sclerosis. 3. The morbid process which lies at the root of this disappearance of the myeline fibers does not begin in the frontal region and progress backward, without, however, reaching the occipital lobe, as Tuczek has affirmed. Neither is it always limited to the superficial stratum of the cortex, nor to the gray substance. On the contrary, the pathological changes make their appearance simultaneously at different portions of the cortex, may involve the white matter as well as the gray, and may extend more or less from their original point of departure. 4. As to the clinical significance of these patho-anatomical findings, it must be confessed that, up to the present time, it has been found quite impossible to bring them into juxtaposition with any particular symptom exhibited by the patient.

The Comparative Weight of the Two Hemispheres in the Insane.—The following are the conclusions arrived at by Marselli ("L'encéphale") with regard to this interesting subject: 1. In contradistinction to the assertion of Luys, the right cerebral hemisphere averages in weight more than the left, in the sane as well as in those of unsound mind. 2. This discrepancy in weight is maintained in both sexes at every period of life. 3. Insanity tends to augment this difference in weight of the two hemispheres. 4. The greatest differences in weight are found in those pyschopathies of a paralytic nature which are followed in the course of regressive changes by so-called senile psychoses. Under these circumstances, however, the preponderance of one hemisphere over the other is to be ascribed to morbid atrophic processes or to cerebral involution. 5. If the disturbing influence of atrophic processes is excepted, the greatest cerebral asymmetry is encountered in persons affected by epilepsy. Under these circumstances it is apparently attributable to a deviation in morphological development of the nervous centers. 6. Finally, there is not the slightest correspondence between the difference in weight of the two cerebral hemispheres of the insane and the asymmetry of the enveloping cranium.

The Structure of the Pineal Gland.—Cionini ("Revista sperimentale di freniatria et di medicina legale"; "L'encéphale") has formulated the results of his investigations as follows: 1. The cells which constitute the stroma of the pineal gland are not of a nervous character, but, on the contrary, are evidently of a purely connective nature. This is shown by the peculiar aspect of the *ensemble*, by the tunnel-like expansions which unite them to the vessels, and, above all, by the total lack of nervous prolongation. 2. Nervous fibers are absent in the pineal gland, or are only found there as accidental features. 3. Finally, the pineal gland is an organ composed of connective tissue, originating without nervous elements, and quite incapable of possessing an appreciable functional importance.

Cancer of the Right Lobe of the Cerebellum and Left Lenticular Nucleus; Marked Vertigo; No Paralysis.—Dr. Byrom Bramwell, in the January number of "Brain," has recorded an interesting case of this kind in which, with the exception of an evanescent paralysis of the right side of the face, motility remained practically unimpaired till at length the patient fell into a semi-comatose condition and died. The salient points in this interesting case are these: Mrs. A., aged sixty-one, was seen in consultation with Dr. Murray, of Galashiels, on the 13th of July, 1886. Eight months previously Dr. Murray had excised the left mamma and some of the axillary glands, which were affected with cancer. The patient made a satisfactory recovery, the wound healed, for six months—until the end of May, 1886. She then began to suffer from severe headache and vertigo; her gait became unsteady, and like that of a person affected with drink. On June 1st she was seized with what her daughter thought was a fit. Dr. Murray, who was immediately sent for, found her sensible, but somewhat confused; the muscles of the right side of the face were paralyzed, the mouth being slightly drawn to the left. She complained of "dreadful" pains all over her head. She remained in much the same condition until June 20th, when she had another so-called fit or faint. Dr. Murray was unable to satisfy himself that there were any distinct spasmodic muscular contractions; the attack, he says, resembled rather a faint than an epileptic fit. After this attack the patient became much excited, like one suffering from delirium tremens; she insisted upon getting out of bed; wanted to dance; said she felt fine, etc. After a week's duration this excitement subsided, and was succeeded by vomiting. When Dr. Bramwell saw her she was suffering from persistent vomiting, headache, and vertigo. When her eyes were open she declared that she felt as if the ceiling were falling upon her, and that objects in the room were moving round her. Distinct, but not intense, double optic neuritis was present. There was, however, no perceptible paralysis in any part of the body, the facial paralysis, already referred to, having disappeared in a couple of days. For three months after Dr. Bramwell's first visit the condition of the patient remained practically the same. During the last month of her life, however, she lay in a semi-comatose condition. On the 25th of November death took place, and Dr. Bramwell made the autopsy, the head only being examined. Besides external deposits in the cicatrix, the left axilla, and the left side of the neck, the following interesting intracranial changes were found: The convolutions were somewhat flattened, and the arteries at the base of the brain were atheromatous. The right lobe of the cerebellum was adherent to the dura mater, and pressure revealed a hard mass in the interior. After hardening in Müller's fluid the brain was divided by transverse vertical sections, when it was found that a large nodule, of about the size of a shilling, had destroyed the lenticular nucleus, but without apparently having implicated the internal capsule in the least. A mass of cancerous growth, fully as large as a small hen's egg, was found in the right lobe of the cerebellum. Considerable compression was exercised by this tumor upon the adjacent middle peduncle. Microscopical examination verified the typical cancerous nature of the growths.

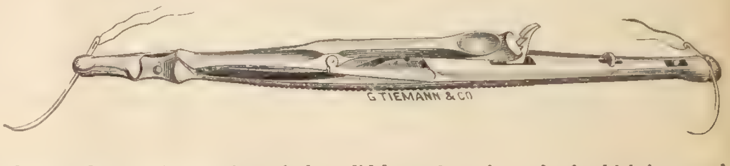
The Pathology of Athetosis.—This affection has recently received attention at the hands of Dr. Alfredo Rubino ("Riforma Medica"; "Lancet"). The lesion which gives rise to athetosis may, he thinks, be situated at any portion of the cerebral motor elements. As a rule, however, it is located in the psycho-motor centers of the cortex, in the inner capsule, or in the optic thalamus. Speaking generally, Dr. Rubino does not regard athetosis as constituting a pathological entity in itself, but, like hemichorea, which is only another form of post-hemiplegic spasm, to be looked upon as merely a product of a preceding affection, such as hæmorrhage, inflammation, embolism, atrophy, etc. Still, in certain cases, particularly where both sides are implicated, he is prepared to admit that we may have to do with true essential neuroses.

New Inventions, etc.

AN ASEPTIC HOLDER FOR HAGEDORN AND ROUND NEEDLES.

By William K. Otis, M. D.

The manifest advantages of the Hagedorn needle and its very general adoption by American surgeons, together with the fact that most of the holders adapted for its use are both cumbersome and difficult to clean, led me, a year or two since, to modify probably the most popular holder ever invented for round needles (that of Dr. Henry B. Sands) in such a manner as to render it capable of firmly holding flat needles, and also of being more easily cleansed, without eliminating any essential feature of the original instrument. This instrument is easily understood by a reference to the illustration. The end for holding round needles is unchanged, except that it is placed at the opposite end of the instrument to that which it originally occupied. The end adapted for flat needles consists of the solid lower bar, the end of which is turned upward at a right angle; a sliding bar forced down upon this end by the powerful double lever firmly grasps a needle placed between them. Several notches have been added to the original spring catch, in order to hold needles of different sizes.



For cleaning, by simply turning the little button which holds down the sliding bar, the whole upper portion of the instrument may be raised, swung over on the axis of the joint, opening the round end, and disconnected. The last-named joint has been constructed on a novel principle, recently introduced, and is more powerful and more easily manipulated than the old French button-hole joint. This instrument, owing to its compactness, is particularly adapted for use in the pocket case, and holds a needle very firmly, and considerable practical use in the hands of competent surgeons has proved its efficiency. It is manufactured in an exceedingly satisfactory manner by Messrs. Tiemann & Co., who possess the present model.

48 West Forty-ninth Street, *June 6, 1888.*

Miscellany.

A Portrait of the late Dr. Agnew.—We have been asked to publish the following:

"At the last meeting of the Ophthalmological and Otological Section of the New York Academy of Medicine the following motion was made and carried:

"'That a committee be appointed, of which the chairman of the section, Dr. David Webster, be a member, whose duty it shall be to obtain a good photograph of the late Dr. Cornelius R. Agnew, for the purpose of having engravings suitable for framing made from this. The right of issue and sale of such engravings shall be given to some first-class publisher, if practicable; if not, the committee shall offer them to the profession at cost.'

"In accordance with the foregoing, a committee has been appointed. Members of the profession who desire such an engraving, accompanied by an autograph signature, should send their names and addresses to the Secretary of the Committee, Dr. Charles H. May, 640 Madison Avenue, New York, at once. When all such names shall have been recorded, those who have requested a copy of the engraving will be notified of the cost of the same, either by the publisher or by the committee having the matter in charge."

The American Climatological Association will hold its fifth annual meeting in Washington on the 18th, 19th, and 20th of September. The preliminary programme is as follows: The President's Address, by Dr. Alfred L. Loomis, of New York; "The Relation of Great Altitudes to Germ Disease," by Dr. S. A. Fisk, of Colorado; "Is Climate an Ætiological Factor in Graves's Disease?" by Dr. R. G. Curtin, of Philadelphia; "An Environment Experiment Reported," by Dr. E. L. Trudeau, of Saranac Lake, N. Y.; "Definite Results Obtained by the Climatic Treatment of Disease," by Dr. A. Y. P. Garnett, of Washington; "Invalids Suited for Treatment at Colorado Springs," by Dr. S. E. Solly, of Colorado; "The Influence of Semi-tropical Latitudes on Types of Disease," by Dr. John Guiteras, of Charleston, S. C.; a discussion on "The Relative Importance of Different Climatic Elements in the Treatment of Phthisis" (reporters, Dr. E. T. Bruen, of Philadelphia, and Dr, V. Y. Bowditch, of Boston); "Observations on the Use of Terebene," by Dr. D. M. Cammann, of New York; "Climate and Bright's Disease," by Dr. J. C. Wilson, of Philadelphia; a discussion on "The Mineral Waters of the United States" ("Their Therapeutic Value as Suggested by their Chemical Composition," by Dr. A. C. Peale, of Washington; "Their Therapeutic Value in Gastro-hepatic Diseases," by Dr. William Pepper, of Philadelphia; "Their Therapeutic Value in Urinary and Arthritic Diseases," by Dr. A. H. Smith, of New York; "Their Therapeutic Value in Malarial Diseases," by Dr. J. C. Van Bibber, of Baltimore); "Report on Mineral Springs," by Dr. C. C. Rice, chairman, of New York; "Interpleural Pathological Products; their Cause, Significance, and Special Relationship to Pulmonary Phthisis," by Dr. J. R. Leaming, of New York; "Conditions which Tend to Render the Atmosphere of a Locality Aseptic," by Dr. J. T. Whittaker, of Cincinnati; a discussion on "The Influence of Altitude on Cardiac and Pulmonary Diseases" (reporters, Dr. F. Donaldson, Sr., of Baltimore, and Dr. J. J. Levick, of Philadelphia); "Climatic Characteristics of Texas," by Dr. Morse K. Taylor, U. S. A., of San Antonio; "Therapeutic Differences of Mountain and Sea Air," by Dr. W. H. Geddings, of Aiken, S. C.; "Indications and Contra-indications for Altitude in the Treatment of Phthisis," by Dr. F. I. Knight, of Boston; a discussion on "The Nasal and Neurotic Factors in the Ætiology of Asthma" (reporters, Dr. F. H. Bosworth, of New York, and Dr. E. L. Shurly, of Detroit); "The Therapy of Climate," by Dr. I. H. Platt, of Lakewood; "The Therapy of Ocean Climate," by Dr. A. L. Gihon, U. S. N.; "The Climatic Characteristics of Roan Mountain, Eastern Tennessee," by Dr. C. J. Kenworthy, of Florida; "Notes of a Summer in Switzerland," by Dr. D. B. St. John Roosa, of New York; "An Epidemic of Cerebro-spinal Meningitis in Central New York," by Dr. W. T. Ford, of Utica, N. Y.; and "A Further Contribution to the Study of Consumption among the Indians," by Dr. W. Matthews, U. S. A.

The American Laryngological Association will hold its tenth annual meeting in Washington on the 18th, 19th, and 20th of September. The preliminary programme includes the following titles: "Ten Years of Laryngology," by Dr. Rufus P. Lincoln, of New York; "Congenital Bony Occlusion of the Posterior Nares," by Dr. Charles H. Knight, of New York; "The Effects of Varying Rates of Stimulation on the Action of the Recurrent Laryngeal Nerve," by Dr. Franklin H. Hooper, of Boston; "Subglottic Laryngeal Enchondroma," by Dr. E. Fletcher Ingals, of Chicago; "A Photographic Study of the Laryngeal Image during the Formation of the Registers, and Production of Variations in the Pitch of the Singing Voice," by Dr. Thomas R. French, of Brooklyn; "Lupus of the Nose, Pharynx, and Larynx," by Dr. Samuel Johnston, of Baltimore; "Imaginary Lingual Ulceration," by Dr. George M. Lefferts, of New York; "A Possible Substitute for Tracheotomy and Intubation in Certain Cases," by Dr. Edgar Holden, of Newark, N. J.; "Antiseptic Nasal Surgery," by Dr. Clarence C. Rice, of New York; "A Case of Sarcoma of the Tonsil," by Dr. Alexander W. MacCoy, of Philadelphia; "A Case of Subglottic Chronic Stenosis of the Larynx cured by Dilatation," by Dr. Frank Donaldson, of Baltimore; "Internal Œsophagotomy," by Dr. John O. Roe, of Rochester, N. Y.; "The Treatment of Atrophic Rhinitis by the Galvanic Current," by Dr. J. H. Hartman, of Baltimore; "The Anatomy of the Nasal Chambers," by Dr. Harrison Allen, of Philadelphia; "Notes on a Case of Nasal Caries complicated with Meningitis, successfully treated by means of the Surgical Drill," by Dr. William C. Jarvis, of New York; "On Fixation of one or both Vocal Bands in the Phonatory Position (so-called Abductor Paralysis)," by Dr. F. Donaldson, Jr., of Baltimore; "Residence at certain Great Altitudes as a means of Cure for Laryngeal Phthisis," by Dr. Clinton Wagner, of New York; and "Further Investigations as to the Existence of a Cortical Motor Center for the Human Larynx," by Dr. D. Bryson Delavan, of New York.

The New York State Medical Association.—The Fifth District Branch will hold a special meeting in Babylon, Suffolk County, on Tuesday, July 31st.

The Health of Michigan.—According to the State Board of Health's summary for the five weeks ending June 2d, during that period diphtheria was reported from twenty-three places, scarlet fever from fifty-four, typhoid fever from fourteen, measles from sixty-four, and small-pox from one place.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 8th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending May 19th corresponded to an annual rate of 18·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Leicester, viz., 15·3, and the highest in Blackburn, viz., 25·4 in a thousand. Small-pox caused 8 deaths in Sheffield and 1 in Bristol.

London.—One thousand four hundred and sixty-nine deaths were registered during the week, including measles, 18; scarlet fever, 13; diphtheria, 29; whooping-cough, 64; enteric fever, 12; diarrhœa and dysentery, 15. The deaths from all causes corresponded to an annual rate of 17·9 in a thousand. Diseases of the respiratory organs caused 296 deaths; different forms of violence, 63; and 13 suicides were registered. In greater London 1,779 deaths were registered, corresponding to an annual rate of 16·8 in a thousand of the population. In the "outer ring" 23 deaths from whooping-cough and 5 from diphtheria were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending May 19th in the sixteen principal town districts of Ireland was 22·8 in a thousand of the population. The lowest rate was recorded in Newry, viz., 7, and the highest in Lurgan, viz., 46·2 in a thousand. In Dublin 160 deaths were registered, including 7 from whooping-cough; enteric fever, 6; scarlet fever, 1; and diarrhœa, 4.

Scotland.—The deaths registered in eight principal towns during the week ending May 19th corresponded to an annual rate of 19·3 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Paisley, viz., 10·1, and the highest in Glasgow, viz., 22·1 in a thousand. The aggregate number of deaths registered from all causes was 488, including measles, 13; scarlet fever, 1; diphtheria, 3; whooping-cough, 14; and diarrhœa, 10.

Netherlands.—The deaths registered in twelve principal cities of the Netherlands, having an aggregate estimated population of 1,129,676, during the month of March, 1888, corresponded to an annual rate of 27·1 in a thousand. The lowest rate was recorded in Leyden, viz., 23 in a thousand; and the highest in Utrecht, viz., 31·8 in a thousand.

Martinique.—The United States consul, in his dispatch dated May 17, 1888, states that "since my last report the condition of the health of this island is greatly ameliorated in regard to small-pox. From the 1st to the 15th of May there were in the city of St. Pierre 59 cases and 12 deaths out of a population of 25,000 persons; in the village of Precheur, four miles distant, 21 cases and 21 deaths; in the village of

Carbet, three miles distant, 5 cases and 2 deaths; and at Port de France, where the epidemic commenced, there are at present no cases."

Havana.—Five deaths from yellow fever and 5 from small-pox were reported for the week ending May 26, 1888.

Santiago de Cuba.—There were no contagious diseases registered during the week ending May 26, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM— Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	May 19.	2,260,945	945	..	....	6	....	12	3	44
Glasgow	May 19.	545,678	224	..	....	....	....	....	1	....
Warsaw	May 12.	444,814	217	..	....	4	....	....	....	....
Calcutta	April 21.	433,219	236	73	....	..	....	....	....	....
Amsterdam	May 19.	389,916	173	..	....	....	....	....	....	2
Munich	May 5.	275,000	148	..	....	....	....	1	3	6
Munich	May 12.	275,000	147	..	....	....	....	...	....	1
Palermo	May 19.	250,000	83	.	....	....	....	1	2	3
Genoa	May 19.	179,541	79	..	....	....	....	....	....	....
Toronto.	May 26.	130,000	27	..	...	....	....	....	....	....
Stuttgart	May 19.	125,510	39	..	....	....	....	...	....	....
Bremen	May 12.	122,000	47	..	....	....	....	..	....	1
Havre	May 19.	112,074	70	..	....	5	....	1	1	....
Leghorn	May 20.	101,718	46	..	....	....	...	....	....	. .
Cadiz	May 19.	65,028	44	..	....	....	....	....	....	....
Cienfuegos	May 21.	40,754	17	..	....	3	...	....	....	....
Curaçoa	May 19.	25,000	5	..	....	....	....	....	....	....
Vera Cruz	May 24.	23,800	28	..	....	....	....	...	. ..	....
Gibraltar	May 13.	23,631	11	..	...	....	...	....	....	....
Sagua la Grande.	May 19.	15,605	7	..	....	....	....	....	....	....
Nassau	May 26.	12,000	......	..	...	...	....	....	....	....
Laguayra	May 19.	7,428	4	..	...	....	....	....	....	....

UNITED STATES.

The Secretary of the Treasury has issued the following circular, under date of June 4, 1888:

In order to assist local authorities in the maintenance of quarantine against the introduction of infectious diseases, as provided in section 4792, Revised Statutes, the act of April 29, 1878, and appropriation acts authorizing the President to maintain quarantine at points of danger, the President has determined to establish, by means of the vessels of the Revenue Marine, a national patrol of the coast of the United States, so far as it may be practicable under existing law and consistent with the performance of the other duties confided to that service.

You are accordingly directed to cruise, actively, with the revenue steamer ———, under your command, upon the outer lines of your cruising grounds, and to exercise special vigilance in speaking all vessels arriving from foreign ports, or from infected ports of the United States, directing your inquiries, first, as to the port from which the vessel sailed, and, secondly, as to the health of those on board at the time of departure, during passage, and at the time of hailing; and should the information gained indicate a condition of contagion or infection in the vessel or crew, or that the vessel has left a port at which contagious or infectious diseases were prevailing, her master will be directed to proceed for examination to the outer quarantine station provided for her port of destination.

The following regulations will be observed relative to the inspection of vessels:

If a vessel be found with sickness on board, or in a foul condition, she will be directed to proceed to the quarantine station hereinbefore indicated, and the Revenue-Marine officer will immediately notify the proper quarantine officer. In such case no person will be permitted to board the vessel until the medical officers in charge of the quarantine shall have given the usual permit.

Should the pilot or master of a vessel, when hailed, report cases of recent or present sickness on board, the revenue officer will not board, but will send her immediately to quarantine.

Quarantine officers will be recognized as follows, viz.:

Medical officers or acting assistant surgeons of the Marine-Hospital Service in charge of Gulf, South Atlantic, Cape Charles, or Delaware Breakwater Quarantines, or any officer of said service on duty at any port on the interior rivers, the Great Lakes, or Pacific coast, and all quarantine officers acting under proper State or local authority.

Special regulations to aid local quarantine authorities will be promulgated hereafter should occasion require.

Dr. Jerome Cochran, of the State Board of Health of Alabama, in a recent report has stated that the late epidemic of yellow fever in Florida was not introduced into the State by the usual trade channels, but by smugglers. This confirms unofficial statements received at this bureau some weeks since. Dr. Cochran states that the last case was discharged May 11th, and the last death occurred May 8th, and that there have been active precautions taken to prevent the reappearance of the disease.

ANSWERS TO CORRESPONDENTS.

No. 192.—There are several processes for making kumys from cow's milk. Wilckens's is as follows: Fill a clean champagne bottle with fresh milk; add from 300 to 450 grains of sugar and a piece of compressed yeast about twice as large as a pea; cork the bottle thoroughly, tying the cork in, and keep it in a warm room for two days, shaking it frequently; then keep it in a cellar for three days, after which it is fit for use.

No. 193.—We think not.

No. 194.—Dr. John C. Dalton, in a monograph of which we do not remember the title.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, June 23, 1888.

Original Communications.

ACUTE ARTICULAR RHEUMATISM IN THE NURSING INFANT.*

By HENRY KOPLIK, M. D.,
ATTENDING PHYSICIAN TO THE EASTERN DISPENSARY, NEW YORK.

The rare occurrence of acute articular rheumatism in the infant at the breast and the restriction of material within certain limits must make this short paper appear simply in the light of a contribution to the literature of this subject rather than as presenting anything especially striking in the study of the disease. So infrequent is the occurrence of polyarthritis rheumatica in the nursing infant that those authors who have had, perhaps, the best opportunities to study its phenomena have completely ignored its existence. Most of the writers to whom I have had access find little reason to depart very far from the lines first laid down by Bouchut concerning the affection. The types, however, which Bouchut brings forward as characteristic have already been rejected by competent critics (Senator). They can not be included under the disease acute articular rheumatism in any sense. In presenting the histories of the following cases I have endeavored to find those characteristics of articular affection and constitutional disturbance which we in later life recognize as classical to the picture of acute rheumatic polyarthritis. The rarity of the disease in such young subjects, I reiterate, may account for the paucity of the material. In these little patients we find the presence of the disease in a number of articulations, the rapid successive involvement of these articulations by the disease, the presence of a certain amount of constitutional disturbance. I have not been so fortunate in the cases I record as to find any symptoms or signs referable to the heart. It is desirable to keep this class of cases distinctly separated in our minds from those diseases lately designated by Gerhardt as *rheumatoid* affections of the joints. The rheumatoid affections of the joints have their counterparts in those obscure joint affections of infancy the pathology of which is still more obscure than that of true rheumatic arthritis, those forms of multiple synovitis, with or without endocarditis, complicating the later stages of the exanthemata.

Case I.—Female infant, aged six months, nursing at the breast, of good development; no previous illness. Mother states that six days previous to the time when the child was seen by the writer it had developed pain, heat, and redness in the joints of the left foot; this was followed by a similar affection of the left wrist and finger joints of the left hand. There was fever, also some profuse perspiration. When the child was seen the metatarso-phalangeal joints of the great toe and the neighboring three toes were much swollen, red, and painful; the temperature of the joints was increased to the touch. The dorsum of the foot was swollen and œdematous; the last phalangeal joint of the great toe was swollen, red, and painful. On the left hand all the metacarpo phalangeal joints, except that of the thumb, were swollen, red, and painful; the left elbow was in the same condition. The last phalangeal joints of the left hand were in the same condition also. The temperature of all the joints was raised to the touch. The body temperature in the rectum was 105·5° F., pulse 180, respiration 48. A profuse perspiration was present, restlessness was extreme, the skin was clear, there was no eruption. Examination of the heart revealed a negative result. The lungs showed the presence of an acute broncho-pneumonia. The urine was normal, the bowels were regular. No other joints subsequently became affected. The temperature gradually began to subside three days after seeing the child. At this time the temperature was 102·5°, pulse 186. The joint affection in the hands and elbow was the same, but the foot was beginning to improve. Five days after the child was first seen by the writer, and on the eleventh day of the disease, a scarlet-fever eruption appeared on the chest and spread over the body. During the stage of desquamation some of the joints remained swollen and painful. This tenderness of the joints did not subside completely until the eighth week after the onset of the rheumatic affection. At no time were there signs of endocarditis.

Case II.—Female infant, aged nine months, nursing at the breast, of good weight and development; no previous illness of any kind; no history of skin eruption or scarlet fever; no signs of rhachitis present. Ten days previous to consultation the infant had developed redness and swelling of all the metatarso-phalangeal joints of the toes of both feet. Also all the joints of the fingers became affected similarly after a short time. There were fever, vomiting, extreme restlessness, and cough. The patient showed signs of pain when the fingers were handled. When seen she had swelling of all the joints named on both feet. The infant was very anæmic, and there was an increased temperature over the joints. The skin of the dorsum of the feet was œdematous. The metacarpo-phalangeal joints and all the phalangeal joints of both hands were swollen, red, and painful. The fingers were held in an extended condition, the thumbs adducted, resembling the condition and position seen in athetosis. The temperature in the rectum was 102°, pulse 126. The lungs showed an acute bronchitis. The heart showed nothing abnormal.

On March 30th, nine days after the writer first saw the child, and in the third week of the disease, recovery was complete. Under the influence of treatment the pain in the joints, redness, and swelling had slowly subsided, the child became less restless, and after the time mentioned could be looked upon as completely convalescent. The joints, though stiff, were moved somewhat by the little patient; no signs of synovitis were present.

In Case I the tender age of the patient and the complete uncomplicated recovery are to be noted. I had occasion to see the little patient some time after recovery. The joints showed no stiffness or signs of the severe articular disturbance or synovitis. The heart also revealed no endocarditic affection or muscular disturbance. The marked interval between the first appearance of the joint affection and the scarlet rash (eleven days) is notable. There are no other points in Case I except the complication of broncho-pneumonia. The typical swelling, redness, and increased temperature of the numerous articulations, and the high fever from the onset of the joint affection, all give the picture of two separate affections (rheumatism and scarlet fever) rather than the complication of the scarlet fever in this case with the rheumatism.

In Case II there was no history or symptom which might lead to the acceptance of the presence of scarlet fever before or after the onset of the joint affection, yet the child was said to have been ill with the joint affection for ten days previous to the consultation, and under observation and treatment the joint affections subsided completely in nine days, making a duration of nineteen days. In this case the absence of endocarditis was remarked and at no time during the height of the disease or the convalescence could that complication be discovered. In this case also the general febrile movement, the swelling, redness, and increased temperature of the affected joints, and the pain in the same, were leading symptoms, and caused the parent to seek relief for the patient in treatment. Here I wish to call attention to the peculiar position of the fingers affected in both hands —that of various degrees of extension with adduction of the thumb. This position reminds the observer of the picture met with in the forms of athetosis. I have had occasion to see this very same position of the fingers in marked acute rheumatic affection of the phalangeal joints of the fingers occurring in a boy aged ten years. I attribute this peculiar spastic-like position taken by the fingers to an involuntary contraction of the extensors of the fingers (interossei). These contractions are brought about by pain. It is also the position, it seems, which would afford relief, if such were possible, from pain.

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* Read before the Medical Society of the County of New York, May 28, 1888.

Bouchut, in the earlier edition of his treatise on the diseases of infancy and childhood, records three cases of articular disturbance in the nursling, and with true scientific diffidence places them under the heading of polyarthritis rheumatica. These cases have long ago been discussed, and the conclusion from competent critics (Senator) has been that the cases of Bouchut at the present day would be placed under the heading of sepsis rather than that of rheumatism.

Wiederhofer, however, records a case as acute articular rheumatism which seems to be more of the color of the picture obtained in this affection. The case was that of a female child, aged twenty-three days, suffering from blennorrhœal ophthalmia. A few days after convalescence from the eye affection the little patient was attacked with an arthritic affection of the left knee, wrist, and elbow. After fifty-four days complete convalescence resulted. Here it is remarkable that the child suffered from an affection of the eyes of probable gonorrhœal origin. The joint affection therefore takes the form more of those joint troubles seen in the adult after attacks of gonorrhœa of the urethra, both in the male and in the female. A careful study must exclude the case of Wiederhofer from the simple rheumatic affections of the articulations, placing it rather under the rheumatoid affections described by Gerhardt.

Demme records a case of rheumatism and endocarditis in a child nine weeks old, of which I have not been able to find any detailed history.

Henoch mentions a case of acute articular rheumatism occurring in a child ten months old. This case was complicated with pleuritis and pneumonia. Its duration was four to five weeks. Staeger (Senator) records a case of acute articular rheumatism at the early age of four weeks. Rauchfuss has met with only two cases of polyarthritis rheumatica among 15,000 young infants. Roger records a much-cited case of rheumatism in a child aged two years.

This would seem to cover the very meager literature on this interesting subject. As to the complications of endocarditis, pleuritis, and broncho-pneumonia, they have all been recorded in isolated cases.

On the whole, Cadet de Gassicourt, after a consideration of an immense material, thinks that acute articular rheumatism is a less frequent affection in childhood than in the adult. In the *nursing infant*, however, the affection is so extremely rare that authors and writers have more or less doubted the authenticity of published cases. Wiederhofer's questionable case was in one of seventy thousand infants. My own cases were gathered from a material of seven thousand sick children. I place no weight, however, on such meager statistics. Henoch remarks that many of these cases in the literature are obscure in detail, and thinks that some are, perhaps, instances of syphilitic disease of the epiphyses, or multiple periostitis and abscess of the joints. Meigs and Pepper think that many irregular forms of rheumatism occur in the nursling, but are lost to observation. D'Espin and Picot urge the rarity of the disease below the age of two years. Langsteet and Cadet place the cases below four to five years in the doubtful category. It would not aid us to go at length into the consideration of the relations of endocarditis to rheumatism, but certain it is that well-authenticated cases of endocarditis have been recorded in the nursling (von Dusch).

There is no subject which is surrounded with more obscurity than that form of rheumatism recorded as accompanying or following the exanthemata. This is notably the case with scarlet fever. Thomas, Bohn, Cadet de Gassicourt, Gerhardt, Litten, Kohrer, and Bokai all have their peculiar views about the nature of this joint affection. As yet there are no exact data of the relation of the one disease (scarlet fever) to the affection of the articulation. Cadet finds rheumatism an epiphenomenon in about one tenth of the cases of scarlet fever. The picture presented in Case I of this paper is not that seen, as a rule, in scarlet fever. Here the joints first affected in the majority of cases are those of the hands. The affection sets in after or during desquamation. In the case here presented the articular affection preceded the eruption. There being no doubt on this point, I feel inclined with Bokai to consider such cases rather the rarer complication of true articular rheumatism by a subsequent attack of scarlet fever. Such cases have been recorded by Larcher and Hiller (Bokai). Knowing exactly so little and seeking to gain knowledge on the chief forms of articular rheumatism, we should be inclined to side with these authors.

Writers are by no means so ready to regard the form of rheumatism occurring in scarlet fever as pure articular rheumatism. A. Jacobi, and subsequently Gerhardt, have presented a most interesting view on this subject. Gerhardt excludes these joint affections from the class of true rheumatisms. He regards the possibility in scarlet fever of a mixed form of infection. It is very possible that the scarlatinous poison, as in typhus erysipelas, may manifest itself in an affection of the synovial membranes, as it does in that of the mucous membrane of the mouth, larynx, glands, etc. Indeed, this view is certainly one of the most scientific yet advanced. In Case I this view would be difficult to apply, seeing the length of time that elapsed between the affection of the joints and the appearance of the rash. Yet, as most authors (Immermann among others) are inclined to regard rheumatism as an acute infectious disease, its occurrence with scarlet fever is no more peculiar than the occurrence of diphtheria with the same malady. Gerhardt found that joint affections were likely to appear in certain epidemics of scarlet fever, in some mounting as high as 37 per cent. of the cases, in other epidemics being entirely absent. Again, the joints of the hand are mostly affected (85 per cent.), and in most instances the affection is of slight severity (Litten, Bokai). Kohrer found that 6 per cent. of patients with scarlet fever had joint affection, and in 66 per cent. the hands were affected. Trousseau found one third of the patients affected with joint trouble. Lastly, endocarditis is less common in the form of rheumatic joint affection occurring in scarlet fever than in the pure form of the disease (Ashby, "Brit. Med. Jour.," 1886, p. 971). Finally, if the pure form of acute articular rheumatism is obscure in pathogeny, its various subforms are still more so. It is, therefore, peremptory in diagnosis not to obscure classification by recklessly applying the terms rheumatic and rheumatoid to all possible joint or muscular affections, and this is more the truth in infancy. Here a number of affections in a hasty examination may be easily confounded, and I will only glance at some of the more important joint affections which in their incipiency or outset may resemble acute rheumatism, though they can hardly be said to be difficult of diagnosis.

Congenital Syphilis.—There are obscure cases of inflammatory trouble at the epiphyses of the bones in the vicinity of a joint which might be incorrectly diagnosticated, especially in the absence of signs familiarly present in this disease. The mothers of these infants can not be depended upon for a very correct history. There must be many cases resembling the following, in which the previous history would aid the diagnosis: Male child, aged three months, nursing at breast; all external evidences of syphilis absent; brought back to me with redness and swelling at the epiphyseal junction, the redness and swelling spreading over the joint, the right elbow swollen and painful, redness and swelling of the ungual phalanges. No suppuration present. Immediate improvement and disappearance of symptoms under appropriate treatment. I saw this case at the eighth month; it then presented a late papular syphilide and plaques.

In *rhachitis* I have met with cases where there was some excessive enlargement of the articular ends of the bones, thus causing parents to think the joints were the seat of disease. The cases occurred in very young infants, and the various phenomena of rhachitis were exaggerated, and rapid and acute in their onset. Movements in these cases were apparently very painful to the infant; it would cry out with pain when fondled by the mother. There was marked clubbing of the articular ends of most of the long bones, with apparent joint enlargement, but the *shafts* of the bones were also broadened and thickened to a marked degree. Pressure on the *joints* and along the shafts of the bones elicitated signs of pain. There were in my cases craniotabes, lack of development, and intestinal disturbance.

Cases of circumarticular abscess may at the outset closely simulate rheumatic arthritis. In these cases there are often abscesses in other parts of the body; the infection may be from the patient's own person or from some external source. The history of a preceding attack of an acute infectious disease will aid in the diagnosis, as such abscesses are prone to follow in the course of an exanthematous fever.

Acute osteomyelitis may at first mislead to the more favorable diagnosis of rheumatism. The formation of abscess, the swelling along the shaft, as well as in the joint vicinity, aid the diagnosis.

Sepsis, in its multiple forms, may affect the joints, and we have only to refer to the literature for many of these cases. To-day the diagnosis can scarcely be said to be obscured by any difficulty.

Beyond the rheumatoid affections discussed above, I have of late noted that very young nurslings, when vaccinated, give evidences of pains in the joints, just as would be likely to be found in the adult. The mothers in several cases came to me with the remark that the child would cry out when handled, and investigation showed an actual tenderness about the knees and elbows when even slightly manipulated. These symptoms appear when the vaccine vesicle is turning pustular. These cases would be classed with the rheumatoid affections of the exanthemata.

In every infant the subject of a joint affection suspected to be rheumatic, the heart naturally receives a good share of attention. Yet I know of nothing more difficult than the determination of an adventitious sound in the heart of these little patients. The overconfident diagnosis of cardiac murmur in these infants will often account for the good prognosis given by some clinicians to cardiac disease of infancy and later childhood. I refer to the ultimate disappearance of murmurs, or so-called cardiac dilatations. Error is easily made in these infants for many reasons: The restlessness of the patient, the great rapidity of the heart's action, the difficulty of distinct localization over the limited area of a small chest, sometimes distorted by the processes of rhachitis. I have not infrequently found adventitious sounds, heard at the base of the heart and also at the apex, disappear after a cessation of fever or a diminished rapidity of cardiac action. These murmurs, heard as I have heard them in the course of exanthemata, must be regarded as dynamic. Murmurs occurring with the first sound and disappearing after a few days, as above mentioned, I have always regarded as not referable to the endocardium.

It is imperative in all cases to wait for a slower cardiac action, or to reduce the number of heart-beats with artificial means (digitalis), before entering the diagnosis of endocardial complication. The nursing infant, we conclude, is not exempt from the liability to attacks of acute rheumatism. In these little patients endocarditis may be absent. This latter fact only strengthens the belief generally entertained by authors (Gerhardt), that the prognosis of rheumatism, good as it is in the adult, is still better in infancy and childhood.

In connection with the subject of rheumatoid affections in infants who are suffering from any disease due to the influences of the gonococcus or the micro-organisms of erysipelas (blennorrhœal ophthalmia or erysipelas), I desire to add the following:

A female infant, three months and a half old, nursing at the breast, was vaccinated on the left arm. The vaccine pustule, in active suppuration, was opened by a traumatism. Necrosis of tissue to an extreme degree followed, with a very red and angry-looking areola spreading toward the elbow on the extensor side of the arm, and with fever. On the day after the first visit the pustule was still suppurating, but the ulcer was cleaner. The child had very marked swelling of the left knee; it was twice as large as its fellow, red, and very painful to the touch, and when movements of the joint were made there seemed to be some effusion. The mother had noticed the swelling during the previous night. The knee was put up in an immobilizing splint, which was removed after two days, as the knee was smaller than at first. The joint was still painful, red, and of heightened temperature; the vaccine pustule was healing kindly, and the blush around its base was subsiding. The knee symptoms improved from this time onward, together with the vaccine pustule and ulceration; but at the present time (a week afterward) the joint is still painful.

Here we have a typical case of joint trouble due in great probability to infection of the structures of the joint by the micro-organisms playing the active destructive rôle about the vaccine lesion.

ON SOME POINTS IN THE DIFFERENTIAL DIAGNOSIS OF CERTAIN EAR AFFECTIONS BY MEANS OF THE TUNING-FORK.*

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In the following paper it will be seen that I have in the main adhered to the general beliefs held by the profession regarding bone-conduction. Many exceptions, however, have been noted and suggestions made, which the reader may regard as, if not original, at least peculiar to the author. The somewhat fragmentary character of the paper results from the mode in which individual cases have been studied.

I purposely have avoided mention of the numerous kinds of tuning-fork, regarding them as complicating things unnecessarily for our present purpose. My own tuning-fork is of large size, being eight inches in length, having thick tines or prongs, and gives a strong vibration. I use no clamps; the pitch of this fork is A of the middle tenor register, and it vibrates something over four hundred to the second.

One important point I have tried to make—that of testing any given tuning-fork with the normal hearing, finding out what it is capable of doing.

I trust I am right in making the statement that the absolute or total bone-conduction, with the tuning-fork placed on the mastoid of a closed normal ear, is as great as can be found in any case of middle-ear disease, and greater than when labyrinthine disease is present. It will follow, then, that a comparison may thus be afforded as to whether any given ear has insufficient bone-conduction. These tests, of course, are to be made with the meatus closed.

As a rule, the bone-conduction will be perceived longer, as well as louder, on a depressed portion of the mastoid at its upper part, just behind the auricle. This may readily be found by experimentation; I have, however, recently observed an exception to this rule. A man with a chronic aural catarrh, with about two inches of watch-hearing in each ear, heard the voice in proportion and also the tuning-fork; on the middle line the bone-conduction was exactly the same for each ear. On the depressed portion of the mastoid, however, the bone-conduction was decidedly weaker. At first I was somewhat perturbed by this apparent anomaly, but, on moving the tuning-fork about on the mastoid, I found an *elevated* portion below in which the bone-conduction was the same as in the fellow-ear, and therefore no anomaly was present. In another case, where one ear (the left) was nearly normal, its fellow, affected with chronic catarrh, perceived the sound of the tuning-fork with very great distinctness and for a long time. When the tuning-fork was placed on the mastoid of the better ear, it was heard *only* in the defective ear—that is, when placed on the depressed portion of the mastoid, as before mentioned. This was regarded as a case where the comparative bone and aerial conduction could not be determined in this ear, for the obvious reason that no bone-conduction could be elicited in the better ear, on account of the very strong bone-conduction of the worse ear, which completely overpowered or virtually obliterated the perception of bone-conduction in the better ear. When the tuning-fork was placed also on the middle line of the skull, the same fact was elicited—to wit, that bone-conduction was perceived only on the defective side.

In this case the tuning-fork, placed on the central incisor teeth, on the glabella, in the center of the forehead, on the top of the head near its center (always on the central line), was heard better with the defective ear, but on passing this point the vibration was only heard by the better ear, except occasionally when a point was touched where the sound seemed to proceed from the point of contact of the tuning-fork. Again, on nearing the occipital eminence, and from that to the nape of the neck, the fork was heard again in the worse ear.

Another curious fact in this case was elicited which is not easily accounted for. On moving the tuning-fork about on the left mastoid, several spots were found where it was heard *only* by the ear of the same side—that is, the good ear. These points were somewhat toward the lower portion of the mastoid and very near the auricle. The same was true when the tuning-fork was placed in front of the auricle, just above the tragus.

The following case of old middle-ear disease in the right ear, with the left ear perfect, will further illustrate other difficulties in diagnosis:

Dr. X., aged thirty, has been hard of hearing in the right ear since he can remember; no tinnitus. He hears a watch $\frac{15''}{48''}$. Left ear normal. In determining his total bone-conduction, with both ears closed, the following facts appeared: With the tuning-fork on the teeth and on the center of the forehead, bone-conduction was about equally long in each ear, although he thought he heard it a little longer in the right or defective ear. When the tuning-fork was placed on the point of election on the mastoid, it seemed to be heard two seconds longer on the side of the good ear, but, on searching for another portion of the mastoid, there was found hardly any difference in the duration of the tone by either ear. I have previously expressed the conclusion that we were justified in finding the point on the mastoid which gave the best conduction. This case, of course, showed better bone-conduction on the right, with the ears open, and a disturbance in the relative bone and aerial conduction.

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* Read before the Medical Society of the State of New York at its eighty-second annual meeting.

It would seem that there are exceptional facts enough to disturb our diagnostic conclusions unless we confine ourselves to the simplest tests, and refuse to raise questions of doubtful utility.

Other difficulties beset a reliable test for bone-conduction. One is the inability of many patients to distinguish between vibrations which are *felt* and those which are *heard.* Any part of the body susceptible of vibrating in unison with a tuning-fork of a given pitch will *feel* the vibration without having *heard* it. Few people who have heard a pipe-organ will fail to remember that, when some of the lower notes are sounded, a rumbling or a jarring sensation in some part of the body is experienced, which, of course, is not a matter of acoustic irritation, but one of general sensation.

A very interesting case coming under my observation further illustrates this point.

Mrs. E., aged twenty-two, had had an attack of basilar meningitis, or cerebro-spinal meningitis, according to her history, which had left her so near to total deafness that no hearing was elicited except by the tuning-fork placed over the left mastoid. From the general conduct of her case this was believed to be impossible, and the tuning-fork was applied to either elbow, when the patient insisted that she heard it distinctly. This, by aural surgeons generally, is regarded as a drawback in making correct observations, but, if the surgeon will take into consideration all the circumstances of the case and use a little ingenuity, a correct conclusion may usually be arrived at.

In regard to Politzer's statement that in a patient with one good or perfect ear and the fellow suffering from middle-ear disease, the tuning-fork on the central incisor teeth with both ears closed will be heard better on the side of the more perfect ear, I would state that the truthfulness of this depends on how far the middle-ear disease has progressed. In a given case of three inches watch-hearing in one ear with middle-ear disease, with its fellow having a hearing of $\frac{35''}{45''}$ by the watch, there was no perceptible difference in the bone-conduction with the tuning-fork on the incisor teeth, both ears being closed with the moistened finger. It is reasonably apparent that the utmost augmentation of bone-conduction consequent on middle-ear disease can not go beyond that of the normal ear when closed. Where the affected ear shows weaker bone-conduction than its perfect fellow (both being closed during the examination), it is reasonable to infer labyrinthine involvement, although even in this instance the affected ear may show superior bone-conduction when both ears are open. Hence this may be used as a point of differential diagnosis as to the commencement of any labyrinthine disturbance.

The example just cited where the bone-conduction was the same in each ear while closed, although one had only a few inches of watch-hearing, consequent on middle-ear disease, seems to show that the middle-ear mechanism has little or nothing to do with the conveyance of sonorous undulations to the labyrinth by bone-conduction, for with the ears in a state of closure it is evident enough that the considerable impairment of the middle-ear mechanism of the defective ear did not hinder the transmissions of vibrations, as one had as good conduction as the other.

Although in a general way we can but admit that augmented bone-conduction with diminished aerial conduction is a universal characteristic of middle-ear disease, we are confronted with the question: How long does this augmented bone-conduction continue to exhibit itself? It is apparent enough that in course of time, if the hearing becomes greatly lowered, the bone-conduction is likely to become weaker than in an earlier stage of the disease. At this point I am ready to believe that labyrinthine involvement has already commenced. I believe this class of cases belongs to the "mixed" order—that is, middle-ear disease with secondary labyrinthine complication. Within the last two years I have changed my mode of teaching bone-conduction at the New York Polyclinic. Whereas formerly I gave as the characteristic feature of labyrinthine disease the weakening of bone-conduction with a similar weakening of aerial conduction, while in middle-ear disease the bone-conduction was augmented and the aerial conduction diminished, and the general proposition was evolved that in middle-ear disease the *relation* between bone and aerial conduction was disturbed—that is, the bone-conduction was relatively too long and the aerial conduction was too short, while in labyrinthine disease this disturbance in the *relative* bone and aerial conduction did not exist, or at least to no considerable degree—at present I am still adhering to the old notion about the augmented bone-conduction in middle-ear disease, but in labyrinthine disease the old proposition must to some extent be departed from, and I am now laying down the basal proposition that in middle-ear disease there is augmented bone-conduction and in labyrinthine disease weakened bone-conduction (the ears remaining open during the test). I believe it to be utterly impossible to distinguish between certain cases of middle-ear disease and disease of the labyrinth alone by the tuning-fork; witness the case of undoubted Ménière's disease and one of old middle-ear disease with labyrinthine complication about to be reported where the bone conduction was about five seconds in each, with one or two seconds of aerial conduction. Perhaps this explanation may be made: there was labyrinthine disease in each, but in one there was *only* disease of the labyrinth. This distinction was not made by the tuning-fork, but by the history of the case. These cases also point conclusively to the proposition that the faulty condition of the middle-ear mechanism does not, at least in some cases, materially diminish bone-conduction, as has sometimes been inferred in cases of intermittent bone-conduction.

In estimating the relative length of bone and aerial conduction, it is well to remember that the bone-conduction in the normal ear is to the aerial about as one to two; in disease of the middle ear, as one to less than two, or it may be even much more than the aerial; and in labyrinthine disease it may be in the normal ratio, or be even greater, *but seldom less.* This enables us to enunciate the proposition that the bone-conduction is rarely or never less than in at least normal proportion to the aerial, unless we except a very few cases where slight aerial conduction may be elicited with absolutely no perceptible bone-conduction. Naturally no accurate relation in such cases could be determined.

I am led to these observations by a recent clinical experience. A patient was asserted to have had seventeen seconds of aerial conduction and no bone-conduction whatever. The watch was heard pressed upon the auricle, the snapping of the finger-nails could be heard nearly three feet, and the voice in proportion. The observation made with the tuning-fork was faulty, because seventeen seconds with the ear unstopped was above that of the normal, and the absence of all bone-conduction was plainly an impossibility. This statement is partly based on the proposition that no known diseased condition of the ear is competent to aid the passage of sonorous impressions to the acusticus while the ears are artificially stopped. It was admitted in this case that the nerve was active.

At the New York Polyclinic last winter I had a perfectly characteristic case of Ménière's disease in a young woman. Suddenly she was attacked with vertigo and nausea, accompanied by tinnitus and deafness in the left ear. This deafness and tinnitus have continued until the present time without any diminution whatever. By aerial conduction the tuning-fork is often not heard at all or only for three or four seconds, while the bone-conduction at the point of election on the mastoid is fully five seconds in duration. This observation was repeatedly made with great care, and each time it was confirmed. The other ear was nearly perfect.

At about the same time I had an elderly subject with chronic middle-ear catarrh of many years' duration, with few subjective symptoms pointing to labyrinthine complications. The tinnitus was far from being constant or even troublesome, hardly a single Ménière symptom was present, and nothing but the profound deafness suggested a suspicion of labyrinthine complications. In spite of this, the patient's conduct under tuning-fork observations was almost identical with that in the case just narrated—that is, the bone-conduction was much weakened, the tuning-fork being heard on the mastoid five seconds, and the aerial conduction was one or two seconds. It has been variously stated by otologists that in the normal ear the bone-conduction was to the aerial as one to two and a half or three or three and a half. In a considerable number of observations made on the persons of medical men at the New York Polyclinic, I have been surprised to find that the proportion was much greater for bone-conduction than has generally been stated. In ears so far approaching the normal as to appear from an examination of ordinary care to be absolutely perfect, the fact appeared that the tuning-fork placed on the mastoid would be heard for ten or twelve seconds, and in the ear only from eight to ten seconds longer, making the aerial conduction hardly of twice the length of the bone-conduction.

It seems to me to be a matter of great importance for every man to test his own tuning-fork on a normal ear, as I believe no two tuning-forks, even of the same size and pitch, are alike in power. Moreover, after a while a tuning-fork loses power and needs to be repeatedly tested on a normal ear to note its condition.

It seems to the writer that we have a standard test for bone-conduction in the closed or stopped-up meatus of a normal ear, the tuning-fork being placed on the mastoid bone as heretofore described. Whatever occult explanation we may give of augmented bone-conduction, consequent on middle-ear disease, it must in all probability be relegated to the same category as augmented bone-conduction resulting from closure of the meatus. This being admitted, we readily infer that a normal ear in this condition is possessed of the greatest amount of bone-conduction, and any diseased condition of the ear affecting the labyrinth is bound to lower the total or absolute bone-conduction, the moistened finger being placed in the meatus of such an ear during the test. In pure middle-ear disease it will be found that the so-called augmented bone-conduction is in reality not in a state of increment, as may readily be proved by closing the meatus during the test, when the length of time which the tuning-fork is heard will at least not be longer than that of the normal ear.

To make the test perfect, every conceivable audible sound should be offered as a test; but this would manifestly be impracticable.

The following case will illustrate the diagnostic value of the method by closing both ears:

Agnes F., aged twenty-one, had complained of deafness in the left ear for three months—since the completion of a sea-voyage from Liverpool. There was no seasickness, and no Ménière symptoms were observed; never even tinnitus. The membranes had both lost the light reflexes and had the appearance of chronic aural catarrh. The state of hearing could not be accurately determined by inspection of the drum-membranes. H. D. R. w. o., n. (snapping of finger-nails) 3″, after inflation 5″; L. so nearly normal that a more exhaustive test was deemed unnecessary. The tuning-fork on the central teeth was heard equally long by either ear. In the left with the tuning-fork at the point of election on the mastoid—that is, where most resonance could be elicited—it was heard 8 seconds, and by aerial conduction 15 seconds, which I regarded as normal. In the right ear aerial conduction was only 4 seconds, and bone-conduction 6 seconds; with both ears tightly closed the bone-conduction on the mastoids was, right, 10 seconds, and left, 15 seconds.

This seems to me a case of middle-ear disease with secondary labyrinthine changes, shown by, first, the superiority of bone-conduction over aerial, with absence of any Ménière symptoms or any constitutional condition which might cause labyrinthine disease; and, second, these evidences of labyrinthine trouble; bone-conduction the same in either ear when the tuning-fork was placed on the teeth; absolute bone-conduction (taken when the ear is closed, on the mastoid) weaker than in the normal fellow. The history seemed to point to a somewhat sudden onset of the disease, but this I believe not to be true, as it is perfectly easy for a patient to become even totally deaf in one ear without being aware of it, at least for a time. Another point making it seem more like a labyrinthine case was the perfect fellow-ear, which is such an infrequent occurrence in middle-ear disease.

I believe that for the most part the faulty state of the middle ear has comparatively little to do in the prevention of the passage of sonorous undulations to the labyrinth. The fact that the tuning-fork is heard as well in the defective ear with tympanal disease, while closed, as in the perfect fellow, also closed, seems to prove this; also the case of Ménière's disease with no middle-ear trouble at all, contrasted with the very old case of middle-ear disease before mentioned, where the bone-conduction was the same in each. It was manifest enough that the great deafness in the one was largely due to middle-ear disease, while in the other it was not due to middle-ear disease at all.

The case of a physician, a highly intelligent man, in whom an error of observation was unlikely to take place, seems to prove that so-called intermittent bone-conduction does exist.

J. D. S., aged thirty-four, had had catarrh of the left middle ear with tinnitus for six or seven years. H. D. Rt. normal, or nearly so; H. D. L. w. 13″, after inflation 36″. Before inflation the tuning fork on the mastoid was heard, respectively, 12 seconds and 13 seconds, in two examinations. After inflation the same tuning-fork, with about the same state of vibration as before, was heard on the mastoid for 17 seconds, 20 seconds, and 22 seconds, on three successive examinations.

In cases of intermittent bone-conduction like the one already quoted there is some difficulty in explaining the phenomenon; why the bone-conduction is not always augmented by means used to relieve pressure on the labyrinth, as, for instance, pushing out a sunken drum-membrane by inflation, does not appear. If pressure is the sole cause of the deafness in such cases, it would seem that relief of pressure should place the nerve in better condition to appreciate bone-conduction, as the aerial conduction has been improved. On the other hand, if the cause of the deafness exists in the badly vibrating middle-ear mechanism due to the crowding together of the ossicles, placing the membrana tympani on the stretch, then the improved bone-conduction resulting from inflation should be constant, which is very far from being the case. In this instance we adopt the theory that bone-conduction is improved or diminished by the good or bad vibratory condition of the middle-ear mechanism. Neither of these theories seems to be tenable. It may be worthy of remark that, from a theoretical point of view, we might expect weakened bone-conduction in every case of lowered hearing from any cause whatever.

It is not in the least a matter of wonder that changes result in cases of tolerably pure middle-ear disease, which produce disturbances in the function of the acusticus, and consequently give the tuning-fork reaction of labyrinthine disease. In any case of permanent impaction of the stapes in the oval window consequent on middle-ear disease there must needs be pressure on the perilymph. Thickening of the membrane of the round window will accomplish the same thing, but in a less degree.

In syphilitic middle-ear disease we are likely to have similar conditions, only greatly exaggerated, the tendency to inflammatory proliferation, as is well known, being much stronger than in non-specific cases, and the structural changes will be proportionately greater. It may also account for the prompt improvement in hearing under a rapid course of mercury. It is by no means denied, however, that the more usual syphilitic lesions are for the most part labyrinthine. All of these conditions are likely, but are not certain, to result in weakened bone-conduction, and add the element of labyrinthine disease to the middle-ear affection.

Summary.—I conclude that the greatest amount of bone-conduction proceeds from a normal ear closed, and that the principal diagnostic sign of labyrinthine disease appears in weakened bone-conduction.

That the apparent increase of bone-conduction in middle-ear disease will disappear when the test is made with the ear closed, when it will be found not to exceed that of the normal ear. In those cases called "mixed" the bone-conduction will be found weakened when the test is made with the ear closed, although with both ears open the affected one may have better bone-conduction than its fellow.

That, so far, it seems that the good or bad condition of the middle-ear mechanism has little influence on bone-conduction.

That the occasional phenomenon of intermittent bone-conduction can not be satisfactorily explained.

That cases of pure labyrinthine disease can not always be distinguished from those of middle-ear affections with secondary labyrinthine changes by the tuning-fork, and that the history of the cases must materially aid us in the distinction.

That the phenomenon of secondary labyrinthine changes in middle-ear diseases is easily explainable.

That there are numerous exceptions to the rules for finding the best points on the head for eliciting bone-conduction.

That the bone-conduction is rarely or never of less than its proper ratio to aerial conduction.

AN EXAMINATION OF THE EYES OF FIFTY CASES OF CHOREA OF CHILDHOOD.

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The cases of chorea from which this study has been made have for the most part been those of patients in attendance at the clinics of Dr. S. Weir Mitchell, Dr. Wharton Sinkler, and Dr. William Osler in the Infirmary for Nervous Diseases. Certain results which should naturally be the outcome of the examinations which follow are not set down, because sufficient time has not yet elapsed to render this possible. The following points have received special attention: The chromatic symmetry or asymmetry of the irides, the development of the face, the condition of the pupils, the acuity of vision, the amplitude of accommodation, the sufficiency or non-sufficiency of the external eye muscles, the state of the refraction, and the appearances of the fundus. A word in regard to the manner in which the cases were studied. Each patient was placed opposite a window and the color of the iris noted, and whether this was alike in each eye or whether differences in color, shade, or tone could be detected. In the same way the two sides of the face and the development of each orbit were noted. The diameter of the pupils was measured facing a clear sky, and the hour was always the same—between 1 and 2 P. M. For this purpose Randall's pupilometer was employed. The acuity of vision was determined under a uniform illumination at a distance of five metres with Oliver's test-types, each eye, of course, being tried separately. The accommodation was tested with D = 0·5 of Snellen's type and the nearest point of perfectly sharp vision recorded. The muscular relations were studied in the manner especially elaborated by Dr. G. T. Stevens * and the surgeons who have followed his methods. Great care was exercised to have an accurately adjusted trial-frame in which the prisms were set. The object looked at was a point of light against a dark background, placed five metres from the patient. At 30 ctm. or the reading distance the test of v. Graefe was employed, but not the usual coarse dot and line figured in the text-books, but a very fine dot and line, demanding accurate accommodation at the distance employed.

The ophthalmoscopic investigations were all made in the dark room of the infirmary, have in each case been repeated a number of times, and have all been done by the writer himself with Loring's instrument. In a certain number of the cases, twelve in all, a mydriatic correction was made, and hence the findings are accurate. In the others the refraction was measured as nearly as possible in the axis of the eyes. Retinoscopy was often employed as a control test. Fully aware that with complete paralysis of accommodation only can the true refraction of the eye be determined, I am none the less convinced that the findings are reasonably accurate. In this connection I am induced to quote a sentence, which exactly coincides with my own view and experience, from Dr. Randall's paper on "A Study of the Eyes of Medical Students" †: "The newer ophthalmoscope of Loring is probably the most perfect instrument in existence for the measurement of refraction; and more than five years' incessant use of it under all circumstances has given the writer a confidence in its readings that work with atropinized eyes and the artificial eye does not show to be overweening. Yet any concealment of its fallibility would be utterly unjust and would tend to weaken the fair claim that this method is the one which, in the absence of complete paralysis of the accommodation, will most frequently approximate accuracy." The ordinary details of the fundus and media of each eye were studied; the appearance of the discs; the absence or presence of the so-called *conus;* the state of the blood-vessels and lymph-sheaths; and the aspect of the retina and chorioid.

Of the fifty patients * examined, ten were males and forty females, or one male to four females. The youngest was a child seven years of age and the oldest twenty-eight. Twelve were under ten years of age, nineteen between ten and fifteen, fifteen between fifteen and twenty, and four twenty years and over. In twenty-five, or 50 per cent. of the cases, the irides were equal in color and shade; in the remaining twenty-five, or 50 per cent., there were differences in shade or tone. In one of these twenty-five only was there any true asymmetry of color. This is interesting in connection with the investigations of Ch. Féré.† This observer found asymmetry of color when not dependent on local conditions a very rare symptom. In over six hundred subjects only seven instances were found, and these were imbecile, hysterical, or epileptic. Asymmetry of tone or shade was not rare, especially among the neurotic. In epileptics 26·7 per cent. had this symptom, 62 out of 76 hysterical patients; in choreic patients, those with obstinate facial neuralgia and with sciatica, chromatic asymmetry was observed. When this symptom occurred in the children of the hysterical, Féré believed it was a sign of neurotic tendencies and called for prophylactic treatment. The pupils were of equal size and shape in thirty-nine, or 78 per cent. of the cases, and unequal in eleven, or 22 per cent. of them. The smallest diameter was 2 mm., the largest 6 mm., while the average size of the entire series was 3·39 mm. In twenty-five, or 50 per cent., of the patients the development of the two sides of the face, of the two orbits, and the general appearances of the eyes and their appendages, appeared symmetrical, while in the remaining twenty-five, or 50 per cent., distinct asymmetry in these respects was readily noticeable.

It is well known that the pupils, other things being equal, are larger in young people, while they become smaller and lose both in range and rapidity with advancing years. It is also stated that widely dilated pupils, which react feebly to light, are frequently a feature in cases of chorea (Dr. G. T. Stevens, *op. cit.*, p. 90). Hence it is interesting to observe that in this series the pupillary diameter ranged from 2 mm. to 6 mm., and the average size was only 3·39 mm. While it is true that marked inequality of the pupils is uncommon, except from disease or highly different refraction in the two eyes, it is also true that mere differences in the size of the pupils are in no way necessarily a sign of disease. Thus, Iwanow ("The Question of Inequality of the Pupils in Healthy People," "Wratsch," No. 7, 1887, abst. in the "Archiv. f. Ophthalmolog.," Dec., 1887, p. 463) found, in his observations on one hundred and thirty-four healthy young military recruits, equal width of pupil in only twelve. The right pupil was larger in forty-nine, and the left in seventy-three. As Landolt has said ("Examination of the Eyes," trans. by S. M. Burnett, 1879), a lack of symmetry in the face, one half being flatter than the other, would lead us to suspect anisometropia, and all forms of asymmetry of the cranium can cause astigmatism. Individuals with such conformation of features are frequently astigmatic, sometimes anisometropic, the refraction being stronger on the side which is the more fully developed—this eye being myopic or emmetropic, while the other, as a rule, is hypermetropic. Distinct asymmetry existed in 50 per cent. of the cases under consideration; indeed, the proportion was probably higher, as only such cases in which this was readily visible were so classified, and no accurate measures were taken.* Again, however, mere asymmetry of the face must not be looked upon as necessarily a symptom of a diseased state, especillay a neuropathic tendency. In Iwanow's series (*loc. cit.*) the face was asymmetrical in one hundred and thirty-one of them, the left being larger in ninety-nine, and the right in thirty-two.

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* "Functional Nervous Diseases, their Causes and their Treatment," by G. T. Stevens, M. D., 1887, p. 194 *et seq.*

† "A Study of the Eyes of Medical Students," by Alexander V. Randall, M. D. "Trans. of the State Med. Soc. Penn.," 1885.

* A considerably greater number than this has been examined, but only fifty are recorded, because in these instances the examinations were many times and carefully repeated. The results of the examinations were condensed in tables, but space is lacking to allow of their publication.

† "Chromatic Asymmetry of the Iris, a Symptom of Neurosis." "Le Progrès médical," September 25, 1885. Abst. in the "Med. News," December 11, 1886.

Full acuity of vision—*i. e.*, $\frac{5}{v}$—was present in both eyes in only ten of the cases; in four of them there was normal sharpness of sight in one eye and not the other, while in thirty-two the vision of each eye was less than normal. In four of the cases it was not possible to record this. In no single instance where it was measured was the amplitude of accommodation equal to the normal standard for the age of the patient.

The state of the refraction in these cases of chorea was the following:

Hypermetropia in twenty-three, or 46 per cent.; hypermetropia in one eye and hypermetropic astigmatism in the other in seven, or 14 per cent.; hypermetropic astigmatism in twelve, or 24 per cent.; myopia in one, or 2 per cent.; myopic astigmatism in three, or 6 per cent.; mixed astigmatism in four, or 8 per cent. In no single instance was a refraction error of less than 1 D found.

As long ago as 1876 Dr. George T. Stevens was attracted by the frequent occurrence of hypermetropia in the eyes of choreic children, and in a paper before the New York Academy of Medicine ("Chorea: its Cause and Treatment," G. T. Stevens, M. D., "Trans. of the N. Y. Academy of Medicine," sec. series, vol. ii, 1876) announced the following proposition: "Chorea is a functional disturbance of the nervous system, which may give rise to organic lesions, and which arises from irritation dependent upon anomalous refraction of the eye, and in a very large proportion of the cases to hypermetropia." In this paper thirty-three cases of chorea are discussed, in which the refraction of the eyes was as follows: Hypermetropia in twenty-four cases, hypermetropic astigmatism in four cases, myopic astigmatism in four cases, unequal myopia in one case.

In the hands of Dr. Stevens the correction of these anomalies of refraction produced excellent results in the curing of the nervous disorder.

About a year later Dr. C. S. Bull analyzed thirty-one cases of chorea with reference to this question, and arrived at very different results ("The Connection between Chorea and Errors of Refraction," C. S. Bull, M. D., "Med. Rec.," May 26, 1877). Of his patients, fifteen were emmetropic; two were emmetropic in one eye and hypermetropic in the other; eight were hypermetropic of the same degree in each eye; two were hypermetropic of unequal degrees in the two eyes; two were simple hypermetropic astigmatism of the same degree in two eyes; one was hypermetropic in one and simple hypermetropic astigmatism in the other; and one was simple hypermetropic astigmatism in one eye and compound hypermetropic astigmatism in the other. This result, emmetropia in fifteen out of thirty-one cases, is unusual, but must be accepted as correct, as Dr. Bull's patients were examined under atropine. Again, Dr. Ranney ("N. Y. Med. Journal," Jan. 14, 1888), speaking of chorea, says: "I have not found a single case where either manifest or latent hypermetropia did not exist." The writer is certainly in accord with this statement—at least in accord with a statement that anomalies of refraction, in his experience, have always existed, a single case excepted. Dr. G. T. Stevens further classifies in his work on "Functional Nervous Diseases," p. 91, 113 cases of chorea, according to the refraction, as follows: Simple hypermetropia existed in 78; hypermetropic astigmatism in 13; mixed astigmatism in 5; myopia, unequal in the two eyes, in 6; myopic astigmatism in 11.

Adding these various examinations together, we have 227 cases of chorea, of which 212 were ametropic and 15 emmetropic. Of the ametropic cases, hypermetropia or hypermetropic astigmatism was found in 177, or 77·9 per cent.; myopia, or myopic astigmatism, in 26, or 11·5 per cent., and mixed astigmatism in 9, or 3·9 per cent. The remaining 15, or 6·7 per cent., were emmetropic.* This high percentage of refraction error, especially of hypermetropia and hypermetropic astigmatism, among choreic children is certainly suggestive. It may be interesting to compare these results with the prevailing refraction in children's eyes. To do this, it is only necessary to turn to that most praiseworthy paper by Dr. Randall, "The Refraction of the Human Eye" ("Amer. Jour. of the Med. Sci.," July, 1885), where we find in conclusion No. 2 the following: "Hypermetropia is the enormously preponderating condition in infancy and early childhood, and the first years of school life witness little reduction in its proportion. . . . It was found in 91·26 per cent. of the eyes of infants examined, in 81·75 per cent. of the eyes of young children, and in *76 per cent.* of the 3,358 eyes of children in the elementary school years. So, also, in the higher schools, it constituted at least 56 per cent. of the whole number of eyes studied." Further comment on this point would seem needless, except to point out the singularly close correspondence in the percentage of hypermetropic refraction in the eyes of children in the elementary school years to the percentage of hypermetropia and hypermetropic astigmatism in the eyes of choreic children.

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* The relation of this asymmetry to the state of the refraction has not been worked out.

* It is not evident whether the 113 cases classified in Dr. Stevens's book include the 33 cases in his original paper or not. If they do, then we have 194 patients in all, of which 149, or 76·7 per cent., had hypermetropia or hypermetropic astigmatism as the existing refraction error. All of the emmetropes were found in Dr. Bull's series.

An imperfect equilibrium of the eye muscles was found in every case examined. In a few instances strabismus was present, while in the remainder some form of insufficiency of the ocular muscles was always manifest. Inasmuch as the terms introduced by Dr. Stevens are convenient, they have been employed to designate the muscular defects, which were as follows: Exophoria alone in sixteen, or 32 per cent., of the cases; esophoria alone in thirteen, or 26 per cent., of the cases; hyperphoria alone in one, or 2 per cent., of the cases; exophoria with hyperphoria in six, or 12 per cent., of the cases; esophoria with hyperphoria in five, or 10 per cent., of the cases; exophoria in accommodation, with esophoria and hyperphoria for the distant point in one, or 2 per cent., of the cases; convergent strabismus in six, or 12 per cent., of the cases; divergent strabismus in two, or 4 per cent., of the cases.

It should be remembered that these were the manifest muscular errors, and have no reference to insufficiencies which may have been latent. It must equally be remembered that, inasmuch as the refraction error was corrected in only a part of these patients, the precaution to examine for muscular defects through the correcting glasses could not nearly always be exercised. What modifying tendency such correction would have had upon the results can only be surmised. In Dr. Bull's series of thirty-one cases (*loc. cit.*) insufficiency of the interni existed in twenty-three. In a considerable number of Dr. Stevens's cases (*loc. cit.*; the percentage is not given) more or less muscular disability was found, and insufficiency of the lateral recti muscles was found in five unassociated with any marked degree of refraction error. The presence of imperfect equipoise of the eye muscles in cases of functional nervous disease, and the belief in some minds that this may be the cause of the disorder, is too well known to need further repetition here. Before deciding the significance of the relation of the high percentage of insufficiency of the ocular muscles in cases of chorea, it may be well to note for a moment its percentage in the eyes of young people generally. In Risley's admirable statistical paper, "Weak Eyes in the Public Schools of Philadelphia" ("Trans. of the State Med. Soc. of Pennsylvania," vol. xiii, 1881), among 554 children of an age ranging from twelve to twenty, and of an average age of seventeen years and one third, insufficiency of the interni was found in 37·2 per cent. Touching this point, Beselin[*] has reached some noteworthy results by the examination of 530 cases, of which 363 were Em., 116 H., and 51 M. All having a refraction error of 1 D. or less are called Em. Equipoise in this particular was found in only 140 = 38·5 per cent. of the Em., in 32 = 27·6 per cent. of the H., and in 12 = 23·5 per cent. of the M. Insufficiency of the interni with tendency to divergence for far or for near, or for both, was met in 155 = 42·7 per cent. of the Em., in 52 = 44·8 per cent. of H., and 32 = 62·7 per cent. of M. The contrary condition, with excess of convergence for near or far, was found in Em. 34 = 9·1 per cent., H. 27 = 23·2, and M. 1 = 2 per cent. There were further 2 H. and 1 Em. with divergence for distance and excess of convergence for the near, while of the contrary condition, excessive convergence for distinct and insufficient for near was met in 33 = 9 per cent. Em., 3 = 2·5 per cent. H., and 6 = 11·4 per cent. M. The tests used were a candle-flame for distance and a white Graefe test for the near.

Further comment here is needless, except to point out the large percentage of muscular errors which occur among children who are not and have not been choreic. It is perfectly proper to note that in these school investigations the tests for hyperphoria were apparently not made, and it is to this defect that special attention has recently been drawn.

In regard to the fundus details and the condition of the media, the following points were observed:

In two instances opacities of the media (cornea and vitreous body) were observed. These, of course, bear no reference to the disease. In two, coarse changes in the chorioid were found (atrophic retino-chorioiditis and disseminated chorioiditis), bearing also probably no reference to the chorea. In one case there was slight but evident optic neuritis; suspicion, however, was not lacking that this child had also a brain tumor, although Gowers has several times observed optic neuritis associated with chorea. In one case the discs were greenish and of diminished capillarity, the eyes distinctly amblyopic without corresponding refraction error, but the vessels were unchanged in size. Atrophy of the optic nerve following chorea has been described by William G. Syme[*]; both sets of vessels were very small, and the trouble was probably due to a former embolus plugging the retinal artery. A similar case is on record by Förster, and Swanzy has seen embolism of the central artery of the retina at the commencement of the attack. Argyll Robertson observed atrophy of one optic disc follow a severe attack of chorea in a young woman. While in the remainder of the cases no perfectly typical, healthy fundus was found, the changes were such as were entirely compatible with systemic health. Quite universally one or another form of conus was present; the veins were frequently distended, often markedly tortuous; coarse retinal striation was quite generally to be found, and the chorioids presented changes ranging from mere woolliness or absorbing interspaces to epithelial chorioiditis. Usually both arterial and venous lymph-sheaths were distended, and many lymph-reflexes were a common feature. In other words, the changes, sometimes slight, sometimes amounting to decided accommodative retinitis and retino-chorioidal disturbances, were such as should be reasonably expected in young, often asthenopic, eyes, suffering, in most instances, with decided errors of refraction. It was, in short, not possible to observe in this series any fundus change that was in any way characteristic of the disease chorea.

The following conclusions seem justifiable:

1. The irides of choreic children quite commonly present chromatic asymmetry in shade, just as the same condition has been found in other forms of nervous disorders.

2. Slight differences in the width of the pupils may be

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[*] "Untersuchen über Refraction und Grundlinie der Augen und über die dynamischen Verhältnisse der lateral wirkenden Augen-Muskeln an Mädchen von 5–18 Jahren," von Dr. Otto Beselin, "Archiv f. Augenheilkunde," Bd. xiv, zweiter Heft, August, 1884, p. 132.

[*] "Edinburgh Med. Jour.," March, 1888.

observed, but not more frequently—in fact, not as frequently—as these have been noted in perfectly healthy individuals.

3. Facial asymmetry is present in about one half of the cases, just as this is present in cases of high refractive error, and also in individuals perfectly free from nervous disorders.

4. Hypermetropia and hypermetropic astigmatism are vastly the preponderating conditions of refraction in the eyes of choreic children, being found in about 77 per cent. of the cases, exactly as hypermetropic refraction is the preponderating condition in childhood generally, being found in 76 per cent. of the eyes of children in the elementary school years.

5. Imperfect equipoise of the eye muscles is found in the great majority of the cases, but imperfect equipoise of the eye muscles is very frequently present in the eyes of school-children free from chorea or neuropathic tendencies.

6. Embolism, atrophy of the disc, and optic neuritis may occur during or after attacks of chorea, but appearances in the fundus oculi characteristic of the disease have not been found.

7. As Octavius Sturges remarks: "It seems certain that a fairly constant proportion of chorea is directly connected with what may be called injudicious schooling, . . . but such nice adjustment as shall prevent overstrain on the one hand and overindulgence on the other is practically unattainable." Certainly an endeavor to lessen the overstrain of the eyes should be made. Hence the refraction errors and muscular defects in these children should be carefully and fully corrected by glasses, by prisms when necessary, or even by judicious surgical interference, and thus a probable exciting element removed; just as we should perform the same service for eyes similarly afflicted in children who are not choreic; just as we should improve the hygiene, remove the anæmia, treat the disabled circulatory apparatus in children who are choreic. Evidence, however, seems quite as lacking that hypermetropic refraction is the basal cause of chorea as it is that the chorea is the cause of the hypermetropia.

SARCOMA OF THE TONGUE

CURED BY OPERATION.

By GEORGE D. BLEYTHING, M.D.

C. S., aged seventeen, born in New York, of German-American and West Indian ancestry, on May 6, 1882, first called my attention to a painful "ulcer" of his tongue. Upon examination, there was found on the border and half an inch to the right of the tip of the tongue a group of granulations slightly elevated above the surrounding tissues. The diameter of the growth was that of a small pea, and there was slight induration of its base. The patient attributed its origin to the irritation produced by a broken tooth, which had since been drawn, in the hope of curing the "ulcer." Cigarette-smoking was supposed to have added to the irritation. An application of nitrate of silver was made at this time, and an astringent wash ordered to be used several times daily. Cigarette-smoking was prohibited.

May 8th.—The base of the ulcer was slightly increased in diameter, and the granulations showed no good effect from the cautery. The treatment was, however, continued, together with the administration of tonics.

11th.—The granulations were removed with scissors, and the base was thoroughly cauterized with nitrate of silver. This treatment was repeated on May 15th.

26th.—As repeated removal and cauterization had not retarded the progress of the growth, it was thought best to leave it for one week undisturbed, in order to obtain for microscopical examination a specimen unchanged by the topical applications. The diameter of the group of granulations had now somewhat increased and the base was more indurated. The granulations were more luxuriant and of a whitish hue, and bled profusely when cut.

About June 1st a cutting was made by Dr. W. P. Northrup, for microscopical examination, and submitted to Dr. Francis Delafield. After some hesitation between simple granulation tissue and sarcoma, the report was returned "round-celled sarcoma," Dr. Delafield adding a grave prognosis.

An operation for the removal of the cancerous growth was performed on June 29th, in which the writer was assisted by Dr. W. P. Northrup and Dr. W. T. Alexander. After etherization the patient's tongue was drawn forward by a strong loop of silk passed through the unruly member. Pressure was made by the thumb and finger in a line parallel to the proposed incisions, on one side by the operator, and on the other side by an assistant. Hæmorrhage was thus controlled during the first step of the operation. With a stout pair of scissors the tongue was now divided exactly in the line of the median rhaphe by an incision an inch and a quarter in length. This was joined at an angle of a little more than 45° by a second incision, which removed a triangular section of the tongue, the third side of which triangle was the free border of tongue with the sarcomatous growth. Very little hæmorrhage followed the operation—much less than was occasioned by the removal of the cutting for the microscope. Two or three ligatures were applied, and the cut surfaces of the tongue were drawn together by silk sutures.

June 30th.—The tongue was swollen, and considerable difficulty was experienced by the patient in swallowing. Fluid nourishment was supplied through a tube, and speaking strictly prohibited.

Healing progressed satisfactorily, and in a week all the sutures were removed and all the ligatures but one had separated. The wound healed by first intention, except at the inner extremity on the under surface of the tongue. This point gradually closed by granulation, covering in one ligature, whose location can still be traced.

Upon complete recovery, no change in the patient's speech could be perceived, and no deformity of the tongue was apparent.

At the present time nearly six years have elapsed since the removal of this sarcoma of the tongue. The whilom patient is a strongly developed, athletic fellow, an expert swimmer, and a champion runner and oarsman. His tongue shows no extraordinary appearance, except that the median rhaphe is, at half an inch from the tip, diverted from a straight line and toward the right side. The border of the tongue shows no irregularity of outline.

Cuttings were made of the portion of tongue removed, and were examined successively by Dr. Northrup, Dr. Delafield, and Dr. Prudden. Areas of grouped cells were found throughout, showing new areas of infection, and gorged vessels illustrating the method of the spreading of sarcoma, which is not necessarily by continuous infection.

1008 Madison Avenue.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & CO.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JUNE 23, 1888.

THE ITCH AS A CURE FOR MELANCHOLY.

IN a recent number of "Lyon médical" the well-known Lyons surgeon, Dr. Daniel Mollière, gives the substance of an account of a curious therapeutical experiment carried out in Berlin, by Dr. Mutzell, in the year 1761. A man, twenty-eight years old, of rather a melancholic temperament, being weighed down by his father's poverty and his sisters' unconventional behavior, gave himself up to a profound melancholy. His mind was incessantly troubled with disagreeable reflections, and he wholly neglected his work, became obstinately silent, and wore a ferocious look—all of which occurrences led his friends to resort to charlatans. But they were of no use, and the man went on from bad to worse; his skin grew yellowish and his whole body excessively thin. In this state he was taken to the Royal Hospital in Berlin, where he lapsed into a sort of torpor from which it was difficult to rouse him by means of threats, the lash, pricking with needles, and the like. He ate only when urgently pressed to do so, and would go for four or five days without asking for food, remaining motionless, with his eyes cast down, paying no attention to questions, and with a slow and feeble pulse.

He remained in this state for two years, during which period Dr. Mutzell vainly tried all the resources of the therapeutics of the period—bloodletting, volatile salts, camphor, essential oils, blisters, and all the most irritating measures had no effect on the man. Twenty-five grains of tartar emetic made him vomit only once; plunged into cold water and held submerged until he was nearly suffocated, he became a little agitated; drops of ice-water let fall perpendicularly on to his shaved head caused him to utter a few complaints; but, whenever they stopped tormenting him, he relapsed into a sort of lethargy. Dr. Mutzell then bethought himself of the Hippocratic saying that great evils called for heroic remedies, and it occurred to him to inoculate the patient with the itch—no trivial matter in those days, when the itch was thought to be a constitutional, hereditary disease involving a liability to numberless accidents, and not, as we now know it to be, the work of an insect capable of being destroyed in the course of a few days. Deep incisions were made into the man's arms and legs; they were then filled with matter pressed out of itch pustules, and closed tight with bandages. On the second day after this operation the patient's pulse began to be excited, on the third day fever supervened, and on the fourth day the pulse beat with prodigious rapidity, and kept on doing so for six days, the man suffering with restlessness, anxiety, frequent sighing, and embarrassed breathing. On the seventh day the fever abated, sweating followed, and red pustules presently appeared on the skin. On the ninth day the man's speech and reason returned, and he declared that he had neither seen nor heard anything during the whole of his stay in the hospital, from which he now departed completely restored.

This man's case was made the subject of an essay by Dr. Toggenburger, who thus summed up: "Sadness and sorrow relax and enfeeble the nerves and all the solids; consequently they make a less decided impression on the contained fluids. The movement of the fluids being retarded, the animal spirits are prevented from circulating with sufficient rapidity; hence the torpor, the insensibility, the sluggish pulse, the lack of appetite, the pallor, and the leanness observed in this man. To cure him, therefore, it was necessary to strengthen the solids, restore vigor to the nerves, and renew the movement of the animal spirits. The remedies at first employed could not penetrate to the seat of the disease; something more active was needed, subtle enough to insinuate itself into the smallest vessels. The scabious matter produced this effect. Introduced by inoculation, its parts developed and gained the heart; the heart, irritated and highly compressed, accelerated the circulation of the blood and excited fever; the blood, roused by the violence of the fever, flushed the obstructed parts and, circulating rapidly, freed the nervous fibers of the matter that was oppressing them; by the reaction of the vessels on the blood, and by the shock of the globules, the viscid humor engendered by the melancholy was dissolved, the sweats facilitated the movement of the fluids, the appetite returned, and the machine was restored."

This explanation is almost as lucid as if it ended with Q. E. D. At all events, the man was cured; but was it by the itch or by septicæmia? And did his pustules remain to plague him?

THE ANÆSTHETIC OF THE ANCIENTS.

IT is probably with almost complete incredulity that most of us have read of the anæsthetic virtues of the mandrake—the *Atropa mandragora* of Linnæus, the *μανδραγόρας* of the ancients—as recounted by the writers of antiquity and in Shakespeare's "Romeo and Juliet." Perhaps we have argued, not illogically, that, if it had really possessed the remarkable properties attributed to it, it would not have fallen into disuse so early as the thirteenth century. Natural as this way of viewing the matter is, there is recent testimony sustaining the ancient repute of the plant, and going to show that it would probably be worth while for the pharmacologists of the present day to subject the physiological action of mandragora to thorough investigation *de novo*. This testimony consists of Dr. Benjamin Ward Richardson's account of his own researches, published in his journal, the "Asclepiad."

It was his observation of the action of chloral hydrate in the year 1869—when chloral was a new drug, possessed of virtues now familiar, but until then generally supposed to be quite beyond the range of therapeutical properties—that first caused Dr. Richardson's memory of the old traditions about mandragora to lead him to take measures to procure the genuine root for purposes of experiment. Having obtained a specimen of the root, he first experimented with a tincture, which he made with strong alcohol. This tincture, however, proved so destitute of any noteworthy action that he was inclined to believe either that the root with which he was working was not that of the true mandragora, or else that the ancient accounts of its virtues were indeed fabulous. But it occurred to him that the ancients might have been as wise in their methods of preparing the drug as they were firm in their conviction of its efficacy; in other words, that strong alcohol was not the proper menstruum for its active principles, and that, to do justice to the physicians of antiquity, he must substantially reproduce their *μανδραγορίτης*, which was either a vinous tincture made by prolonged digestion of the drug in weak wine, or a watery infusion with only enough wine added to preserve it. He therefore made another tincture by four weeks' maceration of the root, in fine powder, in alcohol diluted with five times its bulk of water. This product he found to possess "the most active properties—properties faithfully represented by the ancients in their observations."

We do not gather from Dr. Richardson's account that he has actually observed what we should term surgical anæsthesia from the internal administration of mandragora, unless in fatal doses; but it does appear that the plant is a powerful hypnotic with some similarity to belladonna in its action, and that it has a prompt, decided, and rather persistent action as a local anæsthetic. Applied to the tongue, in man, the tincture produced a sensation of numbness that lasted for several minutes, and caused also a singular taste and sensation of acidity and dryness, which lasted for several days. Doses insufficient to produce actual narcotism caused a "desire for sleep, a sense of fullness in the vessels of the head, a peculiarly enlarged and confused vision, an exaggeration of sounds and noises, an inaction of the bowels, with white, hard fæces when the bowels were made to act, and a singular restless and nervous excitability closely akin to hysteria." These symptoms persisted more or less for two days, and left "a lingering uneasiness and coldness" for a much longer time. In the lower animals, large doses being used, deep sleep was produced, "broken by short and peculiar paroxysms, not of waking, but of excitement, as if from a disturbed dream," and the sleep was followed by manifestations of excitement justifying the old name of *μώριον*—the maddening drug—applied to a variety of the plant. When fatal doses were used, death took place by failure of the respiration, not, apparently, from trouble with the innervation, but from a flagging and final cessation of the action of the respiratory muscles due to obstruction of the bronchial passages by an excessive accumulation of secretion. Dr. Richardson thinks that the action of mandragora depends on an alkaloid, and that the alkaloid might be used like atropine for dilating the pupil, might prove antagonistic to strychnine and to the poison of tetanus, and might, in case of necessity, be employed successfully as a general anæsthetic in cases of surgical operations, with comparatively little risk to life. Finally, it is probable, he says, that mandragora is a good local anæsthetic, "which, with all our advances, is still a desideratum." He promises to return to the subject on another occasion.

MINOR PARAGRAPHS.

THE REPORT OF THE HEALTH OFFICER OF THE DISTRICT OF COLUMBIA.

We are indebted to the Health Officer of the District, Dr. Smith Townshend, for a copy of his report for the year ending June 30, 1887. It is a creditable volume of 168 pages, containing many carefully prepared statistical tables, a number of graphic charts, and a map of Washington showing the localities in which typhoid fever, scarlet fever, malarial fever, diphtheria, and diarrhœal diseases prevailed during the year. Dr. Townshend states that there was an extensive prevalence of sickness among the poor during the winter, and he commends the physicians for the faithful performance of the hard work for which they were called upon.

THE CHARITY ORGANIZATION SOCIETY.

It is gratifying to observe, as appears from the "Sixth Annual Report of the Central Council of the Charity Organization Society of the City of New York," that the society's work is meeting with an increasing degree of interest at the hands of public-spirited citizens. This is doubtless due to the rigor with which the organization has stuck to the objects set forth in its charter, to investigate cases of alleged indigence, to repress begging, to provide work for the poor and direct them to the proper sources of relief, and to promote harmonious cooperation among the charitable institutions of the city. As a matter of course, much of the society's work has to do with medical relief, and this fact tends to bring it frequently to the attention of individual physicians. Besides that, members of the medical profession are not likely soon to forget the instrumentality of a few of their number in organizing the society and guiding it during the first few years of its existence.

FOREIGN APPRECIATION OF AMERICAN PHARMACY.

European recognition of the excellence of the products furnished by several of our American manufacturing pharmacists is a matter that we have often taken pride in mentioning. One of the most recent evidences of the growing appreciation of our pharmacy abroad we find in a notice of one of Messrs. Parke, Davis, & Co.'s publications, in the "Deutsche Medizinal-Zeitung," of Berlin. Not only is the publication in question well spoken of, but the various preparations made by the Detroit firm are praised, especially its "normal fluids," which are credited with an invariability of strength that is not really to be found in the fluid extracts of the pharmacopœias, their strength being proportioned not to the amount of the crude drug employed in making them, but to the richness in alkaloids or other medicinal proximate principles of that amount of the drug of standard excellence.

OBSERVATIONS ON TETANUS IN THE WEST INDIES.

Extracts from several Spanish and West Indian newspapers, published in a recent issue of the "Revue diplomatique," show that Dr. Pasarell, of Porto Rico, has been led by independent investigations to conclusions in regard to the nature and ætiology of tetanus in many respects quite identical with those which M. Verneuil, of Paris, expressed before the French Association for the Advancement of the Sciences on the 21st of

January, 1888. Dr. Pasarell's account of his conclusions was published in the form of a pamphlet in July, 1887, and his title to priority in the matter is maintained by Dr. Bétancès, of Paris; moreover, it seems to be frankly recognized by M. Verneuil, in a letter to Dr. Bétancès, dated in March, 1888.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 19, 1888:

DISEASES.	Week ending June 12.		Week ending June 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	2	2	9	2
Scarlet fever	153	33	164	30
Cerebro-spinal meningitis	4	3	3	3
Measles	208	23	211	17
Diphtheria	167	40	141	41
Small-pox	8	4	3	4

The Health of New York City.—The following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department during the four weeks ending Tuesday, June 19, 1888: Typhoid fever, 26 cases and 16 deaths; scarlet fever, 683 cases and 125 deaths; cerebro-spinal meningitis, 13 cases and 10 deaths; measles, 840 cases and 71 deaths; diphtheria, 614 cases and 195 deaths; small-pox, 30 cases and 12 deaths.

The New York Polyclinic.—Dr. Egbert H. Grandin has resigned his position in the department of gynæcology.

The Honorary Degree of Doctor of Laws has been conferred upon Dr. William Pepper, of Philadelphia, by Princeton College.

The Springfield Hospital.—The board of trustees of the hospital at Springfield, Massachusetts, have concluded a contract for building the new hospital at a cost of $40,000. This includes only the outside work, and it is estimated that it will cost $10,000 more to complete the inside work. The ground on which the hospital is to be built was recently bought for $30,000.

Small-pox in Western Massachusetts and Northern Connecticut.—During the past month there have been four cases of small-pox in Springfield and two in Belchertown, Massachusetts, and one case in Thompsonville, Connecticut; in all, seven cases with two deaths. The prompt and efficient action of the Springfield Board of Health, represented by Dr. A. R. Rice, has undoubtedly saved that region from an extensive epidemic. Arrangements have been made for fumigating and disinfecting the emigrant cars of the Boston and Albany Railroad on their return to Springfield after having conveyed emigrants to the West.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 10 to June 16, 1888:*

Waters, William E., Major and Surgeon. Granted leave of absence for twenty days to take effect about June 15, 1888. S. O. 64, Department of the Columbia, June 8, 1888.

DeWitt, Calvin, Major and Surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Department of Dakota, June 9, 1888.

Birmingham, Henry P., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 117, Division of the Atlantic, June 11, 1888.

Society Meetings for the Coming Week:

Monday, *June 25th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Cambridge, Mass., Society for Medical Improvement; Baltimore, Md., Medical Association.

Tuesday, *June 26th:* Nebraska State Medical Society (Lincoln); New York Academy of Medicine (Section in Laryngology and Rhinology); Buffalo, N. Y., Obstetrical Society (private); Medical Societies of the Counties of Essex (annual—Elizabethtown) and Lewis (annual), N. Y.

Wednesday, *June 27th:* New York Academy of Medicine (Section in Pædiatrics); New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

Thursday, *June 28th:* Vermont State Medical Society (St. Albans); New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Cumberland, Me., County Medical Society (Portland).

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of March 15, 1888.

The President, Dr. A. Jacobi, in the Chair.

On Some Questions in Connection with Syphilis Hereditaria Tarda.—Dr. F. R. Sturgis opened a paper on this subject with the remark that it was one of interest to the general practitioner as well as to the syphilographer, for the question of syphilis entered into the diagnosis in many instances. Formerly there had been many conditions the exact nature of which was not well understood, but which had during the past twenty-five years been assigned to their true cause—namely, syphilis. Of the many questions which had arisen in the discussion of these subjects, none was more interesting than that of whether hereditary syphilis might lie dormant in the system several years, and the symptoms then first declare themselves. It had come to be the generally accepted view that when a patient presented symptoms of the advanced stage, the so-called tertiary stage, of syphilis, he must have previously had milder manifestations of the disease, notwithstanding his denials of it. Tables had been given which went to show that more than three quarters of the cases of hereditary syphilis gave symptoms of the disease before the third month. But it might be objected that the disease might first manifest itself later than the third month, and, if that were true, the question arose, How much later? Cases had been put on record by different observers in which, so far as the history could be obtained, the disease had first manifested itself at from the thirteenth to the twenty-seventh month, and in a few instances at from the twelfth to the fifteenth year. In order to show that in these cases the disease might have caused symptoms before the periods mentioned, the author briefly reviewed the cause of hereditary syphilis. In some cases, especially those in which the patients first consulted the surgeon for syphilitic lesions at the twelfth or fifteenth year of age, the probability of acquired syphilis was great and had not been excluded. In others there might be no remains of the early manifestations, and the patient's friends might have no recollection of their existence; yet this was not positive proof that mild symptoms had not existed and been overlooked. In some cases the remains of an old keratitis, or ear affection, or other lesion was found, while the parents were unable to give any satisfactory account of its origin. In other cases, however, the early symptoms left no remains. An important point which should not be overlooked in making the diagnosis was as to whether the disease was acquired or hereditary. Many children and youths had acquired syphilis, in whom the surgeon had imagined that it was hereditary.

Dr. E. L. Keyes said he had not seen what could truly be called late hereditary syphilis, although he had seen cases in which it was alleged that the late symptoms for which the patient was under treatment had been the first to appear. In his own cases in which late symptoms had appeared he had been able, on close questioning, to draw from the parents or friends a history of early symptoms, or to find old lesions, such as cicatrices of the mucous membranes, or a keratitis, etc. He could recall three or four cases in which persons who had had early symptoms of hereditary syphilis had also maintained late lesions after the age of twenty-one, but in none of them had the symptoms appeared after the twenty-fifth year. As bearing indirectly upon the question under discussion, the speaker remarked that syphilis was a disease full of variety and irregularity. He thought this depended largely upon the soil in which it was planted. It was usually a serious disease in young people, because the soil was succulent, and it was hard to suppose that a child which was born with syphilis could go to a late period of life before showing any manifestations of the disease. In aged people, on the contrary, the disease had, in his experience, proved a light affair. He incidentally referred to the treatment of hereditary syphilis manifested in infancy. That which he recommended was with bichloride of mercury, given in doses of one fiftieth grain, every two hours at first, and perhaps every four hours after the symptoms had yielded.

Dr. P. A. Morrow thought the subject was one that had been to some extent neglected in this country. It was only in recent years that the profession had begun to appreciate how far-reaching syphilis might be in its effects upon the constitution. Many morbid conditions which had formerly been attributed to scrofula and tuberculosis were doubtless the offspring of syphilis. He doubted whether any patient who manifested late symptoms of hereditary syphilis had entirely escaped the earlier symptoms. It seemed to be the common impression that hereditary syphilis seldom manifested itself in any way after the second dentition, and Bumstead and Taylor, in the last edition of their work, had declared that evidences of hereditary syphilis after the twelfth year were so rare that they could practically be eliminated. For his own part, he thought there was nothing improbable in the view that hereditary syphilis might endure throughout life. This was true of acquired syphilis, which did not differ essentially from the hereditary form except in origin. The speaker had treated a great many cases of hereditary syphilis in persons in whom the symptoms had manifested themselves at various ages. In some he had been altogether unable to get a history of early manifestations, but that, of course, was only negative evidence on the question of late hereditary syphilis.

Dr. R. W. Taylor said his conviction was firm that, although hereditary syphilis was more erratic in its course than the acquired form, yet in cases in which late lesions had developed they had been preceded by some symptoms in infancy. The early manifestations might, however, be so ephemeral, light, or slightly destructive in action as not to have led to a diagnosis. When a history of early symptoms could not be elicited, it was due either to the obtuseness of the patient or of his relatives, or to the physician's not prosecuting his inquiry thoroughly enough. The speaker thought it hardly required an apology for him to state his title to having, in America, brought the subject of the bone lesions of syphilis out of the great slough of ignorance, called scrofula, as he had done in his book in 1876. He was alone responsible for what had appeared on this subject in Bumstead and Taylor's work, and he had attempted there to express his ideas clearly to the effect that, while hereditary syphilis might give rise to lesions even after the twenty first year, yet after that period the surgeon was treading on uncertain ground, and was likely to attribute to hereditary syphilis lesions which were the result of the acquired form; he wished to caution against such an error. Undoubtedly many of the cases supposed to be tubercular syphilides or late hereditary syphilis were really cases of lupus. While the fact could not be controverted that lesions of hereditary syphilis might occur after the age of maturity, yet when that period had been reached the surgeon was on *terra incognita.* The speaker expressed surprise at Dr. Keyes's statement that syphilis in old people was a light affair. For his own part, he had found it one of the greatest scourges in this class of subjects; it complicated and aggravated nearly every bodily ailment which they might acquire.

Dr. L. B. Bangs had almost invariably been able, in cases of supposed late hereditary syphilis, to trace some history of early manifestations. He agreed with Dr. Keyes that the course of syphilis depended somewhat upon the character of the soil; that in the young, in whom the cellular changes were rapid, it was apt to run a rapid and dangerous course, but in every case it was essentially the same disease. Very often one was able to find lesions left from early syphilis even in young subjects, which enabled one to diagnosticate the later lesions from those of tuberculosis.

The President said it was not always possible to diagnosticate syphilis, even in cases in which it showed symptoms immediately after birth. The works of Fournier and Taylor were regarded as phenomenal here and in Europe, more particularly in respect to their consideration of the bone lesions of syphilis. There was difficulty in deciding whether changes relating to the cartilages and bones were of a rhachitic or syphilitic nature. This was particularly true in the case of children of one family, in which, as was well known, the eldest might have distinct manifestations of hereditary syphilis, while the younger showed but few symptoms, yet in after-years might have such bone lesions as were commonly attributed to rhachitis. One found only among the older writers the view that hereditary syphilis might cause no symptoms until late in life. Recent authors doubted whether there were any cases in which there had not been early symptoms. The question was obscured by the fact that thirty or fifty years ago nearly all children received at some time considerable quantities of mercury in some form, which would have had an anti-syphilitic effect, although none was intended. He had found caries of the nasal bones in a girl, aged fifteen, in whom the cause was hereditary syphilis, of which he had traced evidences of earlier manifestations.

Dr. Sturgis did not believe that hereditary syphilis ever remained latent to appear at puberty or later without causing earlier symptoms. His attention had been called more particularly to this subject by the case of a young man, aged seventeen, apparently in good health, except for a cold inflammation of the knee with swelling, which had resisted treatment for some time. He inquired about syphilis, but could at first obtain no history; finally he happened to discover the remains of an old keratitis, and then further questioning brought out the fact that the patient had had some trouble with his sight at the age of five. He advised the administration of iodide of potassium, which had a good result on the knee. It was in the untreated forms of early hereditary syphilis that late lesions were most likely to occur, and the cases which were most apt to escape treatment were the light ones—those in which the early disease was overlooked. It was but natural for the surgeon, on seeing these cases for the first time after the patients had reached or passed the age of puberty, to infer that they were cases of late hereditary syphilis. Hereditary syphilis might give rise to symptoms after the twenty-fifth year, but the longer the period after the eighth or tenth year the greater the likelihood of the disease having been acquired.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of April 25, 1888.

The President, Dr. J. Solis-Cohen, in the Chair.

The Treatment of Acute and Chronic Purulent Inflammation of the Middle Ear.—Dr. Laurence Turnbull read a paper on this subject. The cavity of the tympanum, or middle ear, in health, he said, was filled with ever-renewed air by the Eustachian tube, and thus the waves of sound reached the labyrinthine nerve of the ear. It was deeply and securely situated in the temporal bone. It measured two lines from the membrana tympani inward, its breadth and height being about half an inch, and its shape that of a cube. The cavity of the tympanum was apparently lined with a continuation of the mucous membrane of the Eustachian tube, and yet the epithelium was distinct—that of the Eustachian tube was ciliated, while that of the middle ear was tessellated or in squares. This epithelial and subepithelial lining took the place of a periosteum by transmitting the blood-vessels which supplied the bones. This latter fact was important, as any serious affection of this membrane would ultimately react upon the nutrition of the bones forming the cavity, thus resolving a severe catarrh into an osteitis. The existence of this mucous cushion was the reason why affections of the middle ear were so common in young children. The close contact of the jugular vein with the cavity of the tympanum exposed it to the influence of pus collecting on its floor. In acute otitis media there were frequently but slight pathological changes in the ear, except swelling, deep redness, and small perforations of the membrana tympani. The discharge was either mucus, or mucus and pus. This could be shown by the pus dissolving in water, and the mucus floating on the top.

By the use of anodynes, cocaine, chloroform, morphine, etc., pain was relieved; by the use of tincture of aconite, antipyrine, frequent hot foot-baths, and local depletion, inflammation was checked. The parts should be cleansed with a mild, warm antiseptic wash, and, as a rule, all would go well. The patient would generally recover in a short time, without any permanent injury to the hearing apparatus, if not neglected. This disease was now so well known, and, as a rule, so promptly treated, that a much smaller number of cases were now permitted to pass to the second stage of inflammation of the middle ear—the purulent variety—which caused such extensive changes in the hearing apparatus. In such cases of acute otitis media Zaufal found exclusively the two forms of microbes found by Friedländer and Fränkel in pneumonia, viz., a large, short bacillus, encapsulated, and a diplococcus, also encapsulated. He had also shown that the exudation in acute otitis media, before rupture of the membrana tympani, contained pneumococci to the exclusion of all other micro-organisms, and that these introduced into the nasal fossæ might give rise to a meningitis without irruption of the cranial envelope.

In collecting a large number of cases of suppuration of the middle ear, the author had found that, out of 1,700, 454 were acute, while 1,246 were chronic; in 18 there was facial paralysis, while the remainder included polypi, caries, necrosis, cholesteatomata, and tubercles. The most important and extensive changes were found, not in the meatus or that portion of the ear covered by skin, but in the mucous membrane of the middle ear, back of the membrana tympani, extending into the mastoid cells, and through the Eustachian tube to the throat and nose. After this disease had existed for some time there was an increase of the bulk of the mucous membrane, caused by excessive infiltration with round cells, and enlargement, with new formation of vessels. The subepithelial layer, stripped of its epithelium, was replaced by round cells; a suppurating, granulating surface, traversed by many vessels, took its place. The purulent process led to destruction of the tissues, to ulceration and wasting of the mucous membrane, which was eaten away so that the bone was often laid bare. This was especially the case in tubercular otitis media purulenta, and it had been demonstrated by numerous post-mortems that they tended in a very short time (six to eight months) to extensive necrosis of those parts bordering on the diseased middle ear and extending into the labyrinth, the rapid course of the disease being due to the existing tubercular diathesis. It was also often the case in this form of disease of the ear that tinnitus and impairment of hearing preceded the perforation, which was most generally painless, but with rapid destruction of the drum-head. By the transformation of the round into spindle-shaped cells there occurred a formation of a firm connective tissue, which led to abnormal adhesions between the membrana tympani, the ossicula, and the walls of the tympanic cavity, producing permanent deafness. The membrana tympani almost always suffered a loss of its structure, and in severe and protracted cases there were large perforations.

Treatment.—These perforations were most ordinarily treated by a combination of alteratives, so as to modify the nutrition and prevent the destructive tendency from gaining headway. The local application was also of importance, especially such remedies or local means as changed the surface of the granulations, gently stimulated, and cleansed them. No agent in his hands had acted so promptly and well as very finely *levigated* boric acid, alone or in combination with iodol, the latter to act as a true antiseptic, using one part of iodol to ten of boric acid. Boric acid used alone should be sterilized, by heating before using on platinum foil, as it contained fungi and bacteria when kept for some time. The powder must be carried down to the perforation, and through it as much as possible, so as to reach the diseased mucous membrane and the Eustachian tube. If it was blown in, it adhered to the edges of the auditory meatus, causing irritation and sometimes small abscesses. This powder had a stimulating and an astringent effect, like alum used in the same manner. It should be packed carefully, so that the diseased membrane would be fully covered. It was not necessary to seal it; indeed, it was almost impossible to cause the retention of the pus in the cavity, as the powder absorbed it, and the former, when applied, produced a watery discharge by its stimulating effect, so that the patient would be obliged to wipe off the liquid. As to boric acid causing retention of the secretion in the treatment of necrosis of the temporal bone, or in a large perforation, it had not acted so with him. He had used boric acid since 1881, and, like its introducer, Friedrich Bezold, of Munich, had been convinced of its efficacy in these severe cases, and felt sure that the objections to its use—*i. e.*, its causing retention of the secretions—brought forward by some, were entirely without foundation. According to Bezold's and his own experience, extending over a period of seven or eight years, its use had always been followed by favorable results.

Bezold had also been confirmed in his opinion of the un-reasonableness of these objections by a series of physiological experiments in which he tested the capacity of absorption of powdered boric acid for fluids outside of the body before, as well as after, saturation and drying out of the powder with purulent secretion, which, inclosed in a glass tube covered with a perforated membrane, was exposed to the influence of fluids from the ear. This special mode of treatment was peculiarly applicable to large perforations of the membrana tympani; when the perforations were small they were more effectually treated by a solution of boro-glyceride, carbolic acid, or peroxide of hydrogen. When the perforation was situated in the membrana flaccida or Shrapnell's membrane, with disease of the attic of the tympanic cavity, the speaker resorted to a syringe (intertympanic), or a catheter to which a soft rubber ball with a double valve was attached, to withdraw the fluid, and not let it return when diseased, either of which was inserted into the perforation, and the parts were washed with a solution of peroxide of hydrogen or an antiseptic. If carious bone was found, covered with polypi, the latter should be snared, and the dead bone removed; but if the bone was found only inflamed, it should be treated by diluted nitric or carbolic acid, to stimulate the granulations and restore it to its normal condition. All tearing and cutting operations—as these tended to malignant disease—must be avoided; everything should be done with extreme care and gentleness. When pus blocked the tympanum in disease of the middle ear the tuning-fork was heard better through the air than through the bone. But when the pus was removed, and the inflammation reduced, the bone conduction would again improve, as the pressure had been removed from the labyrinth.

It had been found that functional disturbances of hearing were produced by chronic purulent inflammation, by the cicatrices and changes in the membrana tympani, and by adhesions before referred to in the middle ear, after all discharge had ceased. First, the alterations in tension of the sound-conducting apparatus caused by the cicatrices produced irregular vibrations in the membrana tympani. Second, cicatrices which caused adhesions of the membrana tympani with the promontory and of the articulation of the incus with the stapes impeded the power of vibration of the ossicula. Third, if the adhesions were confined to the portion of the membrana tympani situated below the handle of the malleus, the acuteness of hearing had been found to be considerable, while adhesions in the upper half of the membrane produced more disturbance of the hearing, or deafness, especially when the handle of the malleus was drawn inward and ankylosed with the promontory. Fourth, it had been proved that imperfect hearing power might exist even in cases of extensive destruction of the membrana tympani, and with the loss of all the bones, except the foot-plate of the stapes—provided it was movable and the membrane of the fenestra rotunda was not thickened. The regularity of our perception of tones was due to the deadening of the sounds produced by the ossicles; the membrana tympani could only be properly considered as a sound-conductor in connection with the ossicles. Even if fair hearing of speech and music remained, the removal of the membrana tympani, or protecting membrane of the tympanic cavity, was dangerous to life, for it was deprived of a covering which was essential to its continuation in health. To retain and to restore to a healthy condition the diseased and ulcerated bones of the ear and the membrana tympani was of the utmost importance.

Extension of this chronic purulent disease of the ear by the Eustachian tube as a pus carrier produced disease of the upper part of the nasal cavity by developing polypi, enlarging the pharyngeal tonsils, adenoid growths, and hypertrophic enlargements of the turbinated bones and ozæna. He fully agreed with Politzer that combinations of ozæna with disease of the ear were much rarer than would be supposed, from the extension of the process toward the entrance of the Eustachian tube. Where the ear was implicated, the mucous membrane of the middle ear most frequently became sclerosed. In many cases of deviations of the septum there was perfect hearing, unless complicated with prior ear disease, or exostosis extending through the whole line of the meatus; these were to be removed by the dental engine. Such patients suffered from coryza, but were promptly relieved by a four-per-cent. solution of cocaine. There were also many cases of anterior nasal polypus which did not produce deafness. One of the chief causes of deafness was the extension of the pharyngeal tonsil into the tuberosity of the Eustachian tube, and even into its ostium. In the so-called ethmoiditis of Woakes there was not necessarily any causal connection between the ear and these affections; in many cases the nasal trouble had long existed without involving the ear. If the ethmoid cells became diseased or necrosed near the Eustachian tube, there might be paresis of the palate attended with a distressing form of tinnitus, as in one case under his care, in which there had been perforation of the membrana tympani from extension of the irritation through the Eustachian tube. In this case the patient had recovered under local and constitutional treatment. The removal of the diseased spicula of bone, or hypertrophied tumors from the posterior portions of the turbinated bones, improved the deafness in cases of long standing, when attended with retraction of the membrana tympani, the result of naso-pharyngeal disease. There was an absolute necessity that the pressure of the air should be equal on both sides of the membrana tympani, and all obstructions to this must be removed to attain perfect hearing. It was of importance that patients convalescent from chronic purulent ear disease should breathe through the nose and be able to shut the mouth, especially when sleeping, to prevent the drying effects on the throat and Eustachian tube. This was accomplished by a mouth-band tied behind the ear, as recommended by Delstanche, in the case of children, after the removal of the cause. The proper treatment of the naso-pharyngeal disease should always precede this, in order to see that nothing obstructed the respiration, and to watch the controverting effects of all operations by the use of nasal tents of laminaria, or those of platinum, or glass covered with soft rubber, and thus keep up nasal intubation.

Dr. **Randall** had been surprised to hear absolutely no mention in the paper of inflation through the Eustachian tube, so extremely valuable an aid to cleansing, blowing out discharges from the tympanic cavity, and aiding greatly in preventing hurtful adhesions which might interfere with the function of the organ. Inflation by the method of Politzer, or with the catheter, or even that of Valsalva, would often be followed by immediate and marked improvement, and would advance the restoration of function. The author had seemed to think that where naso-pharyngeal trouble co-existed with ear disease, it was secondary, and due to the escape of pus from the middle ear into the throat. Most pathologists were inclined to take an opposite view; and, so far as the speaker's experience went, the trouble in the respiratory passages had been generally of older date. Its nature, in most cases (*e. g.*, deviation of the septum), as well as the history, excluded the possibility of its being secondary to ear disease, or of the latter having had any causal influence; and he had seen cases where long-continued discharge of fœtid pus through the Eustachian tube, though very nauseating to the patient, had had little effect on the naso-pharynx. Further, as pointing to a causation in the opposite direction, was the fact that where there was unilateral aural trouble, the side affected was that of the more obstructed nasal chamber.

To the general plan of treatment advanced by the author everybody could agree. He would, however, once more lay more stress on inflation, so often neglected by the general practitioner, and yet so valuable a measure. Cleanliness was all-important. The general practitioner would use the syringe, which is good; but not so good, perhaps, as the dry treatment. It permitted of the thorough cleansing required, with less danger of damage in unskilled hands, than if absorbent cotton alone were used; it could be repeated as often during the day as the quantity of the discharge might demand; and if the ear was thoroughly dried after it, inflation being practiced to remove all fluid from the tympanum, and the boric powder blown in, the treatment left little to be desired. He preferred insufflation, in using the boric powder, to the method described by Dr. Turnbull. It was so much more easily done, and could be practiced by the patient himself after cleansing by means of a quill or other little tube connected with a mouth-piece. He fully concurred with Dr. Turnbull that there was not much danger of obstruction if the packing was properly done; but he must protest against the "ramming home" sometimes done. He had never seen any trouble at the external orifice of the meatus from the insufflation; on the contrary, the powder tended to allay any inflammation of the meatus; nor had he had the experience referred to, of all the powder being blown back into his face. Inflation, of course, was a measure to be practiced with care; he would not often intrust a Politzer bag to a patient; but insufflation was a very simple procedure, and might be left to the patient with entire safety.

Dr. Seiss said that, as a rule, children who breathed through the mouth did so because the nose was so much obstructed that they could not get sufficient air through it. The forcible occlusion of the mouth by this pad or any other device might, under some circumstances, be very disastrous.

Dr. Turnbull said that Dr. Randall was perfectly right in assigning a high value to inflation as a means of treatment in suitable cases, principally of dry catarrh. It often proved very dangerous in unskilled hands, not only on account of its effects on the circulation, or the local effect of an excessive pressure, but also the blowing back of purulent secretions from the nose into the pharynx might do much mischief. Before practicing inflation, one should cleanse the nose thoroughly. Patients, especially children, should be taught to keep the nose clean. Many children did not know how to blow the nose. The discharge of purulent matter from the ear into the pharynx, setting up secondary troubles, was not a matter of theory, but the result of experience. A very distressing case of bilateral perforation had come under his notice in which hæmoptysis and gastric hæmorrhage had been diagnosticated from the vomiting of bloody discharges which had been swallowed. At the postmortem examination the stomach contained a pint of putrid and bloody matter. He did not approve of syringing, as a rule, and it should never be done except by the physician. In the first place, a syringe was a rarity, and an expensive rarity. Even if the instrument was good, in improper hands it might tear the membrane. He had seen such accidents.

Meeting of May 9, 1888.

The President, Dr. J. Solis-Cohen, in the Chair.

Some Cases of Habit Chorea, and their Treatment.—Dr. G. E. de Schweinitz read a paper with this title.

As was well known, he said, there were certain local choreas for which no definite cause could be assigned, and in which, as Dr. Wood put it, the movements closely simulated purposive acts. A child suffering with this malady—for it usually occurred in children, especially girls—was brought for treatment because it had adopted some trick of gesture. An eye might be rapidly winked, or the eyeball rolled upward, or the brow wrinkled, or the facial muscles contorted, or, perhaps, the shoulder was shrugged, or a forward movement of the head or jaw indulged in. At first these movements were under the control of the will, but gradually became more and more obstinate and more and more aggravated, especially when attention was drawn to them, and sometimes the variety of the performances in a single day was truly remarkable. This affection had been admirably described by Dr. S. Weir Mitchell, and from him had received the name habit chorea. A number of these cases had occurred to the author during the past few years, in which the examination and treatment of the eyes had proved of distinct advantage to the patient; and these might prove interesting.

Case I.—A. B., a girl, aged ten, had been referred to him by Dr. Wharton Sinkler on February 2, 1885. This child had been brought to Dr. Sinkler about a year before, and then the following facts had been elicited: No history of rheumatism; scarlatina when six years old. General health good, appetite and digestion normal. The movements noted were confined to the orbicularis, the right side of the face and neck, and the tongue. In spite of the most judicious antichoreic treatment, these remained unchanged. The following results were obtained by an eye examination:

O. D. $\frac{15}{\text{XL}}$. Amplitude of accommodation 8 D. O. S. $\frac{15}{\text{XXX}}$. Amplitude of accommodation 8·5 D. Conjunctivæ injected, slight blepharitis in each eye and a history of successive crops of styes. O. D. Small oval disc; chorioid ring all around, absorbing at the outer side. Retina markedly striated, veiling all edges of the disc except the temporal. Many lymph reflexes. O. S. Oval disc, less retinal striation, but the inner side of the disc veiled. Atropine solution to full ciliary paralysis was ordered, and the error of refraction determined. This proved to be as follows:

O. D. + 2 s $\frown$ + 1 c, axis 90. O. S. + 2·25 s $\frown$ + 0·60 c, axis 90. The full correction was ordered, the constitutional remedies were continued, and the result was an entire cure of the spasmodic movements.

Case II.—J. H. B., a lad aged seventeen, was referred to him by Dr. S. Weir Mitchell on November 5, 1886. This boy had consulted Dr. Mitchell because he had "got a trick" of twitching his eyes and rolling the balls upward. Before he saw Dr. Mitchell he had been treated with a long course of arsenic and a number of antichoreic and antispasmodic remedies without avail. An eye examination revealed the following points:

O. D. $\frac{15}{\text{XX}}$? Amplitude of accommodation 7 D. O. S. $\frac{15}{\text{XX}}$. Amplitude of accommodation 6 D. Conjunctivæ watery and posterior conjunctival vessels injected and tortuous. O. D. Small nerve, a white patch over the central vessels. Retina much striated and general chorioidal disturbance, with a halo-like band at the lower and outer side of the disc. O. S. Small nerve. Central lymph-sheath full, and nerve surrounded by a broad halo-like band. Sulphate of hyoscyamine to full ciliary paralysis was ordered, and the correction of the refraction error determined as follows:

O. D. + 0 60 c, axis 60. O. S. + 0·25 s $\frown$ + 0·60 c, axis 90. This glass was ordered, and after several months of rest the boy was allowed to resume his studies. Ten months later he returned, and the movements had almost absolutely disappeared. His vision then, through the correcting glass, was with each eye, $\frac{15}{\text{XV}}$, and the amplitude of accommodation was 10 D. Through these glasses there was at 30 centimetres an exophoria (insufficiency of the interni) of 4 degrees; no disturbance of equipoise at 20 feet. The abducting power was 7 degrees.

Case III.—M. E., a girl, aged eighteen, was referred to him by Dr. Wharton Sinkler on May 20, 1887. The patient's mother had had chorea when a child. The patient herself had been perfectly healthy until she was ten years of age. She was then attacked with general chorea, which, however, chiefly affected the face, arms, and the shoulders. At twelve years of age menstruation was established, and the chorea ceased, except for the movements of a spasmodic character which continued in the face, eyelids, and eyebrows. For a time these grew better, but afterward, for a space of two years, grew worse, and the habit became more fixed. In April of 1887 the patient was in fair general health, with occasional dyspeptic attacks and dysmenorrhœa. The movements were now confined to the upper part of the face, and consisted in sudden tight closing of the eyes, rapid raising of the eyebrows and wrinkling of the forehead, with to-and-fro movements of the occipito-frontalis, and an occasional jerk of the head and shrug of the shoulder. The movements were not constant, but were increased when attention was drawn to the trouble. The eye examination yielded the following results:

O. D. $\frac{15}{\text{xx}}$. Amplitude of accommodation 8 D. O. S. $\frac{15}{\text{xx}}$. Amplitude of accommodation 8 D. Conjunctivæ slightly suffused, distinct dread of light, and the retrotarsal folds studded with numerous phlyctenules. In each eye round disc, slight crescents at the outer sides, and marked retinal striation. Refraction doubtful, fundus best studied with a concave glass, probably spasm. Atropine in full strength was used for four days, and complete ciliary paralysis secured. The vision steadily rose, and on the fourth day was easily $\frac{15}{\text{xii}}$ and unimproved by any glass; in short, the eyes were absolutely emmetropic. The mydriatic was continued until all traces of the phlyctenular conjunctivitis had disappeared, and the retinal congestion had subsided. During this treatment the movements markedly decreased, although formerly under the best of internal medication they had stubbornly resisted. About a year later, when last seen, the head movements had entirely ceased; there was an occasional shrug of the shoulder; the eyes were comfortable, the vision and accommodation normal; esophoria 2 degrees at five metres.

Case IV.—D. G., a boy, aged ten, was referred to him by Dr. James C. Wilson, under whose care the patient was for catarrhal jaundice. For some time the boy had adopted the habit of "making faces." This peculiarity had well-nigh ceased during a period when he was laid up in bed with an injury. One movement, however, persisted—viz., a remarkable spasmodic contraction of the right orbicularis palpebrarum almost as complete and decided as if a current had been applied to the motor point. The eyes were as follows:

O. D. $\frac{15}{\text{xv}}$. Amplitude of accommodation 9 D. O. S. $\frac{15}{\text{xv}}$. Amplitude of accommodation 10 D. Exophoria in accommodation 7 degrees. Eyelids heavy; caruncles swollen. The conjunctiva, especially of the fornix, reddened and velvety, and the lymph-follicles swollen; slight muco-purulent discharge in the mornings. Reading was an effort, and sometimes occasioned headache. O. D. Round nerve, central venous lymph-sheath full; retina striated. O. S. Oval disc, slightly hazy retina, and full venous lymph-sheaths. Cumulative instillations of homatropine were ordered, and the refraction was tested and found to be O. D. + 0·65 s. O. S. + 0·50 s. This glass was ordered for all near work, and the local condition in the conjunctiva treated with boric acid, insufflation of calomel, and subsequently painting with a weak solution of nitrate of silver. Internally, Dr. Wilson ordered Fowler's solution in increasing doses. A month later a letter stated that the eyes were more comfortable, and the twitching was seldom noticed.

Case V.—S. B., a girl, aged sixteen, was referred to him by Dr. S. Weir Mitchell on January 9, 1888. This patient was a finely developed girl, perfectly healthy, with no history of rheumatism, scarlatina, or fright. She had formed the habit of rapidly winking, or spasmodically closing the eyes, especially the right one. The movement, at first under the control of the will, gradually became fixed, and was a source of much annoyance and embarrassment. She also suffered from severe brow-ache. An examination of her eyes yielded the following results:

O. D. $\frac{15}{\text{xv}}$. Amplitude of accommodation 10 D. O. S. $\frac{15}{\text{xv}}$. Amplitude of accommodation 10 D. Exophoria in accommodation 7°. The external appearances of the eyes were normal; the conjunctivæ smooth, the vessels free from congestion. Full atropine mydriasis was secured, and the refraction error determined O. D. + 2·25 s. O. S. + 2·25 s. A full correction was ordered; Fowler's solution was given internally, and one month after the treatment was begun the headaches had disappeared and the spasmodic movements well-nigh subsided.

Case VI.—A. B., a boy, aged eleven, was brought to him for an eye examination. This lad was of fine physical development, with no family or personal nervous taint, except that he had for some time been noticed to squint his eyes inward, as children often did "for fun," and rapidly close and open his eyes, making at the same time a curious grimace. The boy was very fond of books, and this habit was most marked when he was poring over some work which was especially interesting to him. The eye examination was as follows: O. D. $\frac{15}{\text{xv}}$. Amplitude of accommodation 8 D. O. S. $\frac{15}{\text{xv}}$. Amplitude of accommodation 8 D. No insufficiency. Conjunctivæ suffused, and posterior vessels injected. In each eye irregularly oval dics; conus; full central lymph-sheaths, and general retinal chorioidal disturbance. H. = 1·5 D. V. V. higher. Atropine and correction of the refraction error were advised, but the advice was declined. The boy was, however, forbidden to use his eyes for near work as much as possible and given the usual remedies. When last heard from he was reported as better, but the habit spasm still continued.

Case VII.—W. F. C., a young man, aged eighteen, applied for treatment on January 17, 1888. His general health was good. No history of rheumatism. Worked hard in a factory. A few years before, when about twelve years of age, had had attacks of "chorea," confined to the muscles of the face, chiefly the orbicularis. This had passed away under general treatment. For some months past he had acquired the habit of rapidly closing and shutting his eyes with a quick, snapping movement. No other muscles affected. This was partially under the control of the will, but was made worse under examination. The eyes were examined and found as follows: O. D. $\frac{15}{\text{xv}}$. Amplitude of accommodation 8·5 D. L. Hyperphoria 1°. O. S. $\frac{15}{\text{xii}}$. Amplitude of accommodation 8·5 D. Exophoria 2°. Conjunctivæ injected, but not catarrhal, no phlyctenules or swollen lymph-follicles. Small oval optic discs; nasal edges veiled, and coarse retinal striation above and below; veins and central sheaths full. Distinct dread of light. Atropine was ordered and continued for several days. Under this the refraction was found to be O. D. + 0·60 s. O. S. + 0·50 s. These glasses were ordered for constant wear. No constitutional treatment was given. Some months later he was reported as comfortable, so far as the eyes were concerned, and that the nervousness had departed.

These seven cases sufficed to give an idea of what service the correction of the errors of refraction did in the treatment of this disorder. In three of them the habit spasm, as Gowers would say, had existed for a long time, and judicious internal medication and proper hygiene had failed to achieve the desired result, which result, however, was attained after the eyes had been thoroughly treated and corrected. In two others the constitutional and the eye treatment were begun simultaneously, and the rapid improvement showed the value of this combination. In one instance the eye examination and the correction of the anomalies of refraction were declined, and the habit still continued. In another, the wearing of the glasses was the only course pursued, and the result was most favorable. In all the cases where errors of refraction existed these were either hypermetropia or hypermetropic astigmatism; in two the errors were 2 D. and more; in three they were less than 1 D., and in one the eyes were emmetropic. It was not amiss to call attention to the fact that so low an error as 0·50 D. might prove an exciting cause, the removal of which would aid in restoring the patient to a normal tone. Case III was especially interesting, because a general chorea had disappeared, and in its place had come a habit chorea—for there was no doubt that the disorder in this patient was correctly so classified—exactly as Dr. Mitchell had observed; in a few instances these cases lapsed into well-pronounced chorea of the ordinary type. It was further useful to observe that the eyes in this case were emmetropic, but that when the existing spasm of accommodation and phlyctenular conjunctivitis had disappeared under the use of the atropine, the patient made rapid strides along the road to recovery. This led him to speak of the value of closely observing the condition of the conjunctiva, especially of the retrotarsal folds, in this malady. Years ago the late Professor Horner had called attention to the fact that children, when first they attended school, were sometimes observed to be given to undue winking of the eyes, and that without the presence of strong light. As an accompaniment, there were often movements of the muscles of the face, arm, or leg. In these cases the local cause was most often found to be some disorder of the conjunctiva, especially follicular catarrh, blepharitis, or an anomaly of refraction, usually hypermetropia. Indeed, in a few instances, the local condition was manifestly the exciting cause of a chorea minor. Treatment of the conjunctival catarrh and correction of the hypermetropia removed the difficulty. Not only might the local conjunctival disturbance and the refraction errors exist, but there might be also imperfect equipoise of the eye-muscles. It was scarcely necessary to refer to this as a possible important factor. In recent times much graver nervous disorders had been attributed to such insufficiencies of the ocular muscles, and for their correction by surgical and other means most brilliant results had been alleged.

It was very far from the author's intention to give an undue importance to these errors of refraction and inflammation of the conjunctiva as exciting agents in the causation of habit chorea. He was not unmindful of the large number of instances that might be traced directly to nasal disorders or to diseases of the pharynx; nor did he forget that other large class for which no adequate cause could be assigned. He only wished to recall to memory the value of searching for these among the other causes, and to emphasize the facts that, if the habit spasm especially affected the muscles of the face, particularly those around the eye, the following points deserved attention: 1. The condition of the refraction and the muscular balance should be carefully examined, and, if found abnormal, corrected. 2. The anomaly of refraction should be determined under complete ciliary paralysis, and the full, not a partial, correction ordered. 3. This correction should be employed in conjunction with proper internal medication and general hygiene, and not to the exclusion of these measures.

Dr. S. SOLIS-COHEN had met, more especially in dispensary practice, with a number of cases similar to those reported. Professor DaCosta had for many years called the attention of his classes at the Jefferson Hospital clinics to this group of choreic disorders associated with eye strain, and during the speaker's service as chief of the medical clinic there had been from three to six such cases presented during the term. In nearly every instance the defect was hypermetropic astigmatism; in most of the few remaining, simple hypermetropia; in one or two, if his recollection served, simple astigmatism. In order to note the effect of correction of the refractive error, the medication was confined to peppermint-water. Some of the patients were affected with facial spasm only, but a few had spasm of the limbs as well. In one or two cases the spasms were unilateral, though he could not say now whether the error was also unilateral. His impression was that it was not. In every case that remained under observation, cure was effected by the correction without medication. Some of the patients disappeared after correction, and in these, presumably, recovery was immediate. In a case now under his care in private practice, a girl complained of frequently falling in the street, from sudden failure, as she expressed it, "of the knees." The eyes were prominent, and the heart's action was rapid, so that a suspicion of Graves's disease was entertained. About a week ago Dr. Jackson corrected the hypermetropia which he discovered, and to-day the girl had reported to the speaker that she had been perfectly well since. The apparent protrusion of the eyes being due to muscular effort, had disappeared, and the cardiac rapidity had abated. He presumed that the reason this association of nervous spasm was found with hypermetropia rather than myopia was that the former caused greater and more constant strain upon the muscles of accommodation.

Reflex Cough from Pregnancy.—Dr. GEORGE ERETY SHOEMAKER read a paper on this subject. Everybody present had, he said, seen cases where, in the early months of pregnancy, the stretching or pinching of nerve-fibers in the uterus had been interpreted, through the medulla, in the muscles correlated in vomiting. Everybody knew of the reflex sensations, of the vaso-motor and trophic changes, of the mental phenomena, and of the occasional bowel complications of early pregnancy. Instead of these, in the case which was to be related, the sensory impulse had traveled from the uterine plexus through other sympathetic paths to the cord, to the medullary center of the pneumogastric, and out along that and other nerves to the apparatus involved in a cough. The case was as follows:

Mrs. X., aged thirty, very muscular, almost an Amazon in physique. General health apparently perfect. She had had two children and three miscarriages, and was now in the seventh month of her sixth pregnancy. It was in 1885 that she was first seen, while bleeding from a miscarriage at two months. She then stated that for several days before the uterus emptied itself she had been troubled by a cough, without expectoration, coming on whenever she lay on her back. It ceased with the loss of the uterine contents.

Second Attack.—Six months later, having been well in the interval, she was again pregnant at two months. No symptoms causing distress now appeared, except a cough, which for two weeks had troubled her as soon as she lay down at night, continuing at intervals until she arose, when it ceased almost entirely for the day. No pain, expectoration, or signs of respiratory irritation. A small dose of bromide and chloral, with hyoscyamus, taken in the evening, at once relieved the condition, which, however, returned immediately if the medicine was omitted. The tendency to cough subsided as pregnancy advanced, and the subsequent labor was normal.

A *third attack*, exactly similar, occurred when she again became two months pregnant, in January, 1888. The cough continued for two weeks before she applied for relief, and then was at once removed by the same treatment as before—a sedative given in the evening.

The patient had never had vomiting of pregnancy. Examination showed no malposition or flexion of the uterus, and no laceration or erosion. The organ was freely movable, with no lateral tenderness; the ovaries were normal. The diagnosis then, in the three successive pregnancies under observation in this patient, had been of reflex cough from gestation, without other symptoms.

That large numbers of the symptoms daily seen were reflex was easy to say, but it was by no means so easy to determine the paths of these reflexes, or to see why in one case one path should be taken, and in another case another. With the same stimulus to the same group of nerve filaments, the result would be interpreted in vastly different effects. So intricate, too, were the relations of different parts of the nervous system, and so diverse the influences which served to switch off, as it were, the ongoing nerve impulse in this direction or in that, that in many instances one was obliged simply to record facts, and leave unexplained, because yet unknown, the steps which led to their development. It would be remembered that the pneumogastric nerve had an extremely wide distribution and connection; that, besides going to the heart, and besides influencing the vaso-motor system through the medullary vaso-motor center, it went to the lungs and larynx, to the pharynx, and to the œsophagus; that it was connected with the external auditory canal and with the meninges of the brain; that it went to the stomach and intestines, to the liver and spleen, and, in short, to most of the abdominal viscera. Its connection with fibers of the sympathetic in the abdomen enabled it to receive impulses from organs, such as the uterus, with which direct connection had not yet been fully traced. While most cough was well known to be reflex from stimulus to pneumogastric fibers in the lungs or larynx, the same result might follow a stimulus applied almost anywhere in the distribution of this nerve. The members of the society need only be reminded of the cough which occasionally came from putting a speculum into the external auditory canal, and of that which sometimes followed a disordered stomach; while the writer had now in mind a case of persistent cough which had resisted treatment for years by the best specialists, and which was, in his judgment, probably due to irritation of the meningeal branch of the pneumogastric in the posterior cranial fossa. Why the connection with the vomiting apparatus offered the easiest outgoing motor path from the medulla for the reflex impulses from the pregnant uterus we did not know. The reflex sensory, trophic, and vaso-motor paths in pregnancy seldom, if ever, led to the stomach. In the case which had been narrated, the easiest path from the medulla led to the respiratory system, probably as the result of idiosyncrasy alone.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of May 3, 1888.

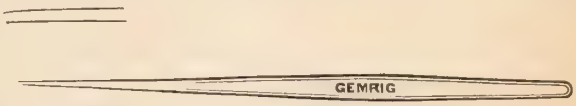
The President, Dr. Thomas M. Drysdale, in the Chair;
Dr. J. M. Baldy, Secretary.

Typhoid Fever following Removal of the Uterine Appendages.—Dr. Joseph Price reported the case of a woman, thirty-seven years old, from whom the right uterine appendages were removed at the Gynecean Hospital on the 11th of February. Two years before, the left appendages had been removed. Her recovery from the first operation had been speedy, and for a year she had seemed in perfect health; then the pelvic symptoms had returned and been referred to the right side. She reacted perfectly from the second operation, and for nine days her temperature varied between 98·6° and 100·1° F. During that time she complained of a good deal of headache, weakness, and mental depression; on the evening of the ninth day her temperature rose to 102°, and she had a slight chill. From that time forward her case presented the typical features of typhoid fever. The nervous symptoms were not particularly marked. The temperature varied from 99·8° to 104·8° for four weeks. She made a good recovery, and was now in better health than before the operation. The fever had probably been contracted before the patient's entrance into the hospital. The operation had not seemed to influence the course of the fever, nor the fever the result of the operation. The rise of temperature and the early constipation and meteorism had naturally been attributed to the operation, and treated accordingly, until the diagnosis of typhoid fever was made, after which the usual treatment for that disease was pursued.

Hæmato-salpinx.—Dr. William Goodell showed a specimen from a case of removal of the uterine appendages. The right tube was enlarged to the size of a fist and filled with broken-down blood-clots. It had burst either just before or during the operation, for the woman had not complained of abdominal pain, and when the abdominal incision was completed a quantity of bloody serum had escaped from the wound. At the first examination the speaker had thought that the case was one of tubal pregnancy. Both ovaries and tubes were adherent and were removed with difficulty. The abdominal cavity was flushed with plain warm water and a drainage-tube inserted. The patient had recovered promptly.

Dr. Howard A. Kelly wished to call attention to a defect of nomenclature. If a laminated clot was found in the ampulla of the tube, the condition was termed hæmato-salpinx; again, if a large amount of watery but distinctly bloody fluid was found, unquestionably of a different origin—what its origin was it was impossible at present to say—the same term was applied. He had found that in this second class of cases the fluid was intensely poisonous and would produce violent septic peritonitis in a short time if every trace of it was not removed. The fluid quickly became diffused, and even the washing seemed to cause its more complete diffusion. It would be well if the distinction between the two sorts of material were borne in mind when cases were reported.

Fibro-cystic Tumor of the Uterus.—Dr. Goodell showed a specimen from a woman, forty-six years old, who had had regular but profuse menstruation for several years. Three years before a tumor had been discovered, which had gone on increasing. Fluctuation was so marked and the cyst was so flaccid that the speaker had thought that it was a parovarian cyst. The patient would not permit a vaginal examination, but that would not have thrown much light on the diagnosis. The cyst was multilocular, and weighed thirty-three and a half pounds. It sprang from the right cornu of the uterus, and was densely adherent. The pedicle was transfixed and tied, its end was scooped out, and the peritoneal edges were sewed together by a continuous gut suture. The ovaries, being healthy, were not removed. The recovery had been prompt, although the drainage-tube had had to be kept in for eleven days.



Local Depletion in the Treatment of Uterine Disease.—Dr. Kelly showed a knife-blade tenaculum for scarification of the cervix uteri. While he had rarely found that local depletion alone was very valuable in the treatment of any form of uterine disease, he had frequently found it a powerful adjunct. Chronic or recurring pelvic congestions, accompanied by great pain and discomfort, could often be relieved by free depletion of the cervix, and the patient's condition temporarily much improved. Many of the neurotic symptoms associated with a congested, puffy, blue, plethoric cervix also underwent marked improvement under this plan of treatment judiciously carried out, together with the use of glycerin packs and tamponing. He knew of no other measure equally serviceable and speedy for the treatment of laceration of the cervix with eversion and infiltration of the lips. Many patients on whom he would formerly have operated now recovered perfectly and remained well if the uterus was prevented from sagging by giving proper support to a torn or relaxed outlet. Except in this latter condition, when associated with laceration, depletion was not often called for in spare or anæmic patients. But to secure any advantage by this practice it must be carried out thoroughly. The speaker was in the habit of drawing from six drachms to an ounce or an ounce and a half of blood every five days or once a week, following the depletion immediately with a glycerole or boric-acid pack, which was often retained until the next depletion. To deplete the congested pelvic organs, he had scarified the cervix, both the vaginal and the uterine surfaces, and the vault of the vagina. He had done the latter experimentally, and was not sure that it had any special advantage over simple scarification of the cervix. Serious difficulties had occasionally arisen in the hands of others from too deep a penetration of the scarifier, which might wound an artery of large caliber and give rise to alarming hæmorrhage. Difficulties had also arisen in the use of the spear-pointed instrument, which often occasioned great pain, obliging the operator to desist or to make but few punctures. A serious objection to the straight instrument was that the depletion could only be practiced with safety and satisfaction on the prominent rounded extremity of the cervix. To obviate these objections he had devised the knife-blade tenaculum, and had used it extensively for many months. It was made like an ordinary tenaculum, with a blade instead of the hook. The blade was placed at an angle slightly obtuse to the handle and about as long as the terminal portion of an ordinary rectangular uterine tenaculum. In using it, the cervix should be fixed with a tenaculum in the cervical canal, when the short blade of the instrument could be plunged rapidly in a number of places into the vaginal aspect of the cervix anteriorly and laterally and even within the cervical canal, being sometimes used to open a very small external os. The shortness of the blade and the fact that it was placed at an angle to the shaft prevented a deep and dangerous penetration, and, if the cutting edge was kept sharp and the instrument was used with rapidity, it generally occasioned but little pain. The instrument was made entirely of metal, and a very satisfactory model had been made by Mr. Gemrig, of Philadelphia, as shown in the cut.

Dr. J. C. Da Costa had been glad to hear Dr. Kelly speak so highly of depletion in certain diseases of the uterus. He was in the habit of exemplifying it every winter by showing suitable cases to the class at the Jefferson Hospital. He thought that if from one ounce to four ounces or more of blood were removed, instead of six drachms, the effect would be better. The instrument shown was a very pretty one, but an ordinary straight bistoury enabled him to puncture the cervix in all its parts, including the canal. Even if an artery was cut, it was of little consequence; the trouble usually was that the bleeding stopped too soon.

Dr. Goodell remarked that in most cases simple exposure of the cervix to the air with the speculum would cause it to become pale, although, he granted, the effect was doubled by the loss of blood. He had formerly bled very frequently, and occasionally did so still, but not so often, because he believed that the importance of uterine congestion was overrated. With reference to the hæmorrhage, while he agreed in a measure with the last speaker that it was not usually to be feared, yet he had had a patient bleed so profusely after reaching home that she had had to send for a physician to check it. He had once, while using a Buttles's spear, wounded a vessel so large that it threw out a stream of blood beyond the speculum. But ordinarily the difficulty was to abstract enough blood. When the punctures bled too much, he touched each one with a pointed stick of lunar caustic, which never failed to stop the hæmorrhage.

Dr. Parish could indorse all that Dr. Kelly had said. For a number of years he had practiced this method of depleting the uterus, whether there was laceration or not, when the organ was in a condition of congestion. He also emphasized what had been said with reference to the relief and cure of symptoms in cases of laceration of the cervix. In many such cases he had seen a perfect union of the flaps result, but with a continuation of the pain and distress and frequently an increase of dysmenorrhœa. Where the laceration was not deep, he substituted depletion, conjoined with other treatment, for the operation. He added that depletion of the cervix, and particularly of the canal, was one of the best means of treating many cases of endometritis. He had seen sterility of eight and ten years' standing practically cured by this method of depletion.

Dr. Kelly thought that the removal of an ounce and a half of blood every few days was quite sufficient. During the procedure the patient lay on her back with either Goodell's or Nelson's speculum in place, which conducted the blood into a wide-mouthed graduated bottle.

A Self-retaining Speculum was shown by Dr. Kelly, who said that he thought it contained the elements of what would be a sufficient self-retaining speculum for the knee-chest posture. A number of specula for this purpose had been invented—some supported by the buttock, others by a belt around the waist, and others at a still higher point. It seemed to him that such a speculum should take its purchase from the pubic rami, for there there was a firm resistance; and such an instrument was the one shown—for the knee-chest posture, not for Sims's. It consisted simply of a dilator of the vaginal outlet. It obviated the necessity of a nurse, whose presence was often a serious objection.

(To be concluded.)

Book Notices.

On the History, Nature, and Treatment of Syphilis. By J. L. Milton, Senior Surgeon to St. John's Hospital for Diseases of the Skin. London: Henry Renshaw, 1887. Pp. x-377.

This book is a second edition of a work on the treatment of syphilis published by the same author in 1875, which has been entirely rewritten, and to which much new matter has been added, so that the present book is more than twice as large as its predecessor. Chapter I is devoted to the study of the history of the disease, discussing the different theories advanced for and against its antiquity, and the various diseases, such as sibbens, yaws, and parangi, that have sometimes been considered as forms of syphilis and sometimes as independent diseases. Chapter II takes up the question of the unity or duality of syphilis, deciding in favor of its being a disease *sui generis* quite apart from the chancroidal disease and from gonorrhœa. It seems to us unfortunate in this view of the case that the author should speak of two forms of syphilis, one of which he calls "simple" syphilis and the other "true" syphilis. The former is supposed to arise from a soft sore, the chancroid, and to manifest itself by very slight constitutional symptoms. Chapter III is a polemical one upon the nature of syphilis. In it the author discusses the various theories of the nature of the poison of syphilis, how it gains access to the body, and how it acts afterward. We must confess our inability to get a clear idea of what our author believes in regard to these important questions, negation rather than affirmation being seemingly the rôle he has chosen to play. It is refreshing to find, on page 182, the following sentence: "With respect to the bacteria and micrococcus found by Barduzzi, and the bacillus demonstrated previously by M. Martineau in conjunction with M. Hamonie, I can offer no remarks, as I don't understand such matters." In fact, our author does not hold the microscope in such great reverence as many do, and hence this part of his book will not be received with favor by the bacteriologists and their followers. The remainder of the book is devoted to treatment, and is substantially the same as in the first edition. We will only note that the author has great faith in mercurial vapor baths combined with the use of iodide of potassium and a modified Zittmann's decoction.

Like all the author's writings, this book is vigorous in its style and full of humorous side remarks. It is not a complete treatise on syphilis, as the systematic description of the lesions and a consideration of the diagnosis of the disease are wanting. But it is a helpful book, full of practical good sense, which should be read by all who are interested in syphilis.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—E. Delorme, "Traité de chirurgie de guerre." Vol. i. (16*fr.*) —— C. Féré, "Dégénérescence et criminalité." (2*fr.* 50.) —— Hérard, Cornil, and Hanot, "La phthisie pulmonaire." (20*fr.*)

Asselin & Houzeau, Paris.—A. Blum, "Chirurgie du pied." (8*fr.*)

J. B. Baillière & fils, Paris—L. Bouveret, "Traité de l'empyème." (12*fr.*) —— J. Cyr, "Scènes de la vie médicale." (3*fr.* 50.) —— X. Galezowski, "Traité des maladies des yeux." 3d ed. (20*fr.*) —— Moreau, "La folie chez les enfants." (3*fr.* 50.) —— E. Duval, "Traité pratique et clinique d'hydrothérapie." (10*fr.*)

O. Berthier, Paris.—F. Bosselut, "De la méningite tuberculeuse chez les jeunes enfants âgés de moins de deux ans." (4*fr.*)

Bureaux du "Progrès médical," Paris.—E. Bouchut, "Tubage de larynx ou intubation."

G. Carré, Paris.—A. Malécat, "Les vénériens et le droit commun."

A. Delahaye & E. Lecrosnier, Paris.—L. Baumel, "Maladies de l'appareil digestif." (9*fr.*) —— Bataille, "Traumatisme et névropathie." (4*fr.*) —— Rendon, "Fièvres de surmenage." (3*fr.* 50.) —— J. Moricourt, "Manuel de métallothérapie et de métalloscopie." (3*fr.* 50.)

O. Doin, Paris.—H. Dubief, "Manuel pratique de microbiologie." (3*fr.*) —— A. Berlioz, "Recherches cliniques et expérimentales sur le passage des bactéries dans l'urine." (3*fr.*) —— Bérenger-Feraud, "Leçons cliniques sur les tænias de l'homme." (8*fr.*) —— C. Debierre, "Les maladies infectieuses." (3*fr.* 50.) —— L. Monange, "Les drogues chimiques." (3*fr.*) —— V. Parant, "La raison dans la folie." (7*fr.*) —— G. Treille, "De l'acclimatation des européens dans les pays chauds." (2*fr.*) —— H. Verneuil, "Les grandes fièvres à travers les découvertes." (2 *fr.* 50.) —— R. Blondel, "Les strophantus du commerce." (2 *fr.*) H. Vincent, "Recherches expérimentales sur l'hyperthermie et les causes de la mort dans celle-ci." (3*fr.*)

G. Masson, Paris.—Verneuil, "Mémoires de chirurgie." Vol. v. (15*fr*).

G. Steinheil, Paris.—P. Legendre, Barette, and Lepage, "Traité pratique d'antisepsie appliquée à la thérapeutique et à l'hygiène. Vol. i. (10*fr.*)

F. Vallardi, Milan.—D. Barduzzi, "Dermatologia propedeutica." (4*l.*) —— G. Bizzozero, "Di un nuovo elemento morfologico del sangue e della sua importanza nella trombosi e nella coagulazione." (2*l.* 50.) —— C. Forlanini, "La tecnica delle inalazioni medicamentose." (1*l.* 25.) —— A. Biondi, "Trattato di semiotica medica." (15*l.*) —— V. Cozzolino, "La safilide acquisita ed ereditaria dell' apparato uditivo." (1*l.* 25.) —— A. Cuzzi, "Manuale di ostetricia ad uso delle levatrici." (7*l.*) —— G. Chiarleoni, "Malaria e funzioni della riproduzione nella donna." (1*l.* 25.) —— P. Albertoni and A. Stefani, "Manuale di fisiologia umana." (20*l.*)

BOOKS AND PAMPHLETS RECEIVED.

Annual of the Universal Medical Sciences. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D., Lecturer on Laryngology and Rhinology in Jefferson Medical College, Philadelphia, etc., and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Philadelphia and London: F. A. Davis, 1888. Vol. I, pp. xv–541. Vol. II, pp. 550. Vol. III, pp. 563. Vol. IV, pp. 548. Vol. V, pp. 566.

A System of Obstetrics. By American Authors. Edited by Barton Cooke Hirst, M. D., Associate Professor of Obstetrics in the University of Pennsylvania, etc. Volume I. Illustrated with a Colored Plate and Three Hundred and Nine Engravings on Wood. Philadelphia: Lea Brothers & Co., 1888. Pp. xiv–17 to 808.

Practical Electro-Therapeutics. By William F. Hutchinson, M. D. Philadelphia: Records, McMullin, & Co., 1888. Pp. 9 to 247.

Contribuzione all' etiologia della pleurite acuta primaria. Pel Dott. A. Serafini. [Estratto dal "Progresso Medico."]

Transactions of the New York State Medical Association, for the Year 1887. Volume IV. Edited for the Association by Alfred Ludlow Carroll, M. D., of Richmond County. Pp. viii–554.

Disorders of Menstruation. By Edward W. Jenks, M. D., LL. D., Professor of Gynæcology in the Michigan College of Medicine and Surgery, etc. Detroit: George S. Davis, 1888. Pp. 120. [The Physician's Leisure Library.]

Tre casi di paralisi pseudo-ipertrofica in tre fratelli. Tesi di laurea del Dott. Carlo Borsari, Proassistente. [Estratto dal "Giornale di Neuropatologia."]

Reports on the Progress of Medicine.

GYNÆCOLOGY.

By ANDREW F. CURRIER, M. D.

The Comparative Therapeutics of Uterine Myomata.—Villa ("Nouv. arch. d'obst. et de gyn.," Jan., 1888). The treatment by curetting in those cases in which there is hæmorrhage and in which the hæmorrhage proceeds from the diseased mucous membrane can not be expected to have more than a temporary value. Especially is this the case if the tumor is developing toward the mucous membrane of the uterine canal, the mechanical conditions being such that frequent recurrences of hæmorrhage are favored. The treatment by intra-uterine injections is based upon the idea or the suspicion of a chronic inflammatory condition of the mucous membrane to which the hæmorrhages or the decomposition of the secretions are attributed. It is believed that this is not a very efficient method of treatment, and it is also accompanied with certain elements of danger. Treatment by means of dilating tents and medicated tampons, after the method of Vulliet, is considered a feeble palliative means and not likely to produce any permanent benefit. Treatment by electricity has recently excited great enthusiasm, but it is not believed that it is likely to result in the radical cure of the neoplasms to which it is applied. The various methods of treatment by the galvanic, the faradaic, and the mixed currents are reviewed in detail, and, as to results, it is found that by some a diminution or a suppression of hæmorrhage, a relief from pain, and a diminution in the volume of the growths have been obtained; by others the tumors have been caused to disappear in some cases, to diminish in size in others, and the hæmorrhage to cease, while others have obtained no satisfactory result. The only positive effect which the author has seen has been in almost all cases a very favorable stimulating effect to the general nutrition and a recuperation of the strength. The method of Doléris has been followed by the author, a galvanic current to the extent of 250 milliampères being used. In some cases the action upon the uterine muscles has been such that it favored the subsequent removal of interstitial tumors of moderate size, but the large tumors were not so favorably influenced. In all varieties of uterine myomata it is believed that electrotherapy is only an unreliable palliative method, and many patients who have been submitted to it have eventually required the radical operation. Not a few accidents have accompanied this method of treatment. Septicæmia is almost inevitable after a large number of punctures have been made, in consequence of necrotic tissue which must result in the womb or in the center of the tumor. There have also been cases in which the rectum and the bladder have been perforated with consequent fistulæ, the abdominal cavity has been entered, and pyosalpinx and peritonitis have followed. The treatment by ergot is still practiced to a certain extent, but this is considered a method of doubtful efficiency. When pediculation occurs during its use it must not of necessity be assumed that it is due to the ergot. In short, the author leads one to infer that no ideal method of treatment has yet been proposed.

Functional Neuroses in Women, and their Relation to Disease of the Sexual Apparatus.—Uherek ("Ctrlbl. f. Gyn.," Jan. 28, 1888) considers the so-called functional neuroses in the female sex as based upon general disease of the entire nervous system, the anatomical changes in which have not yet been demonstrated. Upon this assumption he believes that nervous diseases in women, in so far as they are not complicated with diseases of individual organs, are not curable, though they are susceptible of improvement, and may have periods of latency. The failure to cure the disease is not attributed to its incurability, but to the fact that when they are partly cured patients invariably expose themselves to those conditions which favor a recurrence of their trouble. It is admitted that there is a co-ordinate relation between diseases of the nervous and the sexual apparatus, and that relief to the latter sometimes relieves or appears to relieve the former. With regard to the symptoms in neuroses in women the author has observed that there are three groups of them occurring at intervals, and interchangeable—namely, the cerebral, the spinal, and those which pertain to digestion. The first group is sometimes absent, but the others are almost always present. The treatment of these cases should be entirely symptomatic, but narcotics should be avoided; the bromides will be found very useful, however, and should be given to the limit of tolerance. The author thinks that entirely too much attention has been paid to the genital organs in connection with these neuroses. Even if there are lesions which have resulted from parturition, the general condition should receive a large share of attention. If subinvolution of the uterus is present, the internal use of hydrastis for several months is recommended. It is believed that it is of special value in the profuse and long-continued metrorrhagia which sometimes accompanies the establishment of the menstrual function. In regard to the propriety of submitting virgins to a gynæcological examination, this should be governed by circumstances and should be left to the tact of the physician, but one should err in making too few rather than too many examinations and applications. In many cases examination *per rectum* or *under ether* will be the proper course. In general the author recommends treatment away from home, hydrotherapy, electricity, massage, and regulation of the diet.

The Operative Treatment of Retroversio-flexio Uteri.—Sänger ("Ctrlbl. f. Gyn.," Jan. 14, 21, 1888). The number of cases of retroversion of the uterus in which treatment by means of pessaries is unsuccessful is so great that other means of treatment are imperatively called for. The elements for successful treatment by operative means are safety, certainty, and restoration of the organ to its physiological condition, and it is admitted that no such ideal method has as yet been devised. The methods of treatment which have thus far been proposed the author divides into two classes—the indirect and the direct. The former consist in remedial measures upon the defects in the perinæum and prolapses of the vagina and uterus; the closure of deep fissures of the cervix; amputation of the whole or a portion of the *portio vaginalis;* removal by laparotomy of tumors which cause retroflexion of the uterus; removal of the ovaries; and separation of adhesions by Schultze's method. The direct consist in the method of Rabenau—that is, the resection of the anterior vaginal wall, the Alquié-Alexander operation, or shortening of the round ligaments, and ventral fixation of the uterus after laparotomy. The history of the latter operation is divided into the following stages or periods:

1. Kœberlé's operation, performed in 1877, for retroflexion, and consisting in removal of both ovaries and securing the stumps of both ovarian ligaments in the abdominal wound; and Hennig's, which consisted in securing the right ovarian ligament and the left *ala vespertilionis* in the lower angle of the abdominal wound. 2. Oophorectomy and suturing of one ligament in the abdominal wound, after the method of Olshausen, Sänger, and others. 3. Oophorectomy and suturing of the *fundus uteri* to the abdominal wall by one suture, after Tait's method; by suturing with chromic catgut sutures, after Czerny's method. 4. Oophorectomy and suturing of the stump of one ligament to the abdominal wall, after Kelly's method. 5. Oophorectomy and suturing of the stumps of both ligaments to the abdominal wall, according to the method of Olshausen and Sänger. 6. Suturing of the *cornua uteri*, including the round and broad ligaments, to the anterior abdominal wall, without oophorectomy—Sänger's *ventrofixatio uteri retroflexi.*

Sänger's experience includes two cases of variety No. 2, three of variety No. 5, and two of variety No. 6, the latter being the first recorded instances of a deliberate attempt to secure fixation of the uterus to the abdominal wall to cure retroflexion. In these two operations three worm-gut sutures were secured at one end in each uterine horn, the other end being carried through the abdominal tissues and secured externally. The first suture was passed through the round ligament at its junction with the uterus, the second and third at short intervals below the first through the anterior lamella of the broad ligament. The propriety of doing this operation after removal of the ovaries has been recognized by Hegar and Fritsch, and Sänger considers that it is indicated in all cases in which there is or is not fixation of the retroflexed organ, if there is reason for believing that it will be a source of future trouble. An element of danger must be recognized in the possible lodgment of intestines between the two lines of sutures by which the uterus is secured to the abdominal wall. This danger is small, however, and can usually be avoided by suitable precautions when the sutures are passed. The recommendation of Caneva to attach the fundus uteri to the abdominal wall without opening the peritoneal cavity carries with it the risk of wounding the intestines, and is therefore believed to be impracticable. Among other possible means of operative treatment for backward displacements Sänger suggests transverse incision through the posterior vaginal wall close to the cervix, and perhaps with the Paquelin cautery, and shortening of the posterior suspensory ligaments, or the opening of Douglas's pouch and insertion of a tampon of iodoform gauze to excite an aseptic adhesive inflammatory process with subsequent retraction of the cervix, in imitation of the spontaneous cure of retroversion which has been observed after an intermediate attack of parametritis posterior and pelvic peritonitis in Douglas's pouch. Curative inflammations may also possibly be excited by injections of alcohol into the retrocervical tissue and into the folds of Douglas's pouch. The suggestion of Schultze may also be practicable for some cases of retroflexion with adhesions—namely, to cut transversely through the posterior vaginal wall, draw down and open the peritonæum, introduce the finger into the abdominal cavity, release and replace the adherent uterus and ovaries, and then, by means of sutures connecting the peritonæum with the posterior vaginal wall, to so shorten the latter that the cervix will be drawn far back in the pelvis. Theories are also advanced for operative treatment by means of an incision in the anterior vaginal wall, but the author admits that he has not yet had opportunity to put them to a practical test.

The Operative Treatment of Retroperitoneal Cysts with Reference to Mikulicz's Method of Drainage.—Fenger ("Ctrlbl. f. Gyn.," Jan. 14, 1888). By retroperitoneal cysts the author refers exclusively to monocystic tumors of the parovaria. They always have thin walls, which are easily ruptured, but rupture seldom gives rise to general peritonitis, the clear non-infectious fluid being readily absorbed. Simple puncture and aspiration of these tumors may be followed by complete cure. If a radical operation seems to be indicated it will often be found very difficult, on account of the very firm adhesions which may have been contracted with surrounding viscera. In some cases they can not be removed without the exercise of unjustifiable violence to the intestine. Mikulicz's plan is to stuff the cavity of the sac with iodoform gauze, and this secures complete drainage of the secretions which may result, by capillary attraction. The author's experience with this plan of treatment has been very satisfactory.

The Most Recent Standpoint in regard to the Treatment of Carcinoma Uteri.—Schauta ("Ctrlbl. f. Gyn.," Feb. 4, 1888). The relative value of partial and complete extirpation of the uterus is discussed in this paper, and a conclusion reached in favor of the latter The author analyzes the statistics of Hofmeier, who advocates, with Schröder, the partial operation, and alludes to the statement that the total extirpation is advised by them only in cases in which the disease has extended beyond the os internum. In such cases, however, the disease is well advanced, and it is easy to understand that the comparative results must be unfavorable to the radical operation. A more satisfactory opinion can be reached by comparison of the statistics of operators who do both the partial and complete operations with those of the ones who do only the complete. Thus, by comparison of the statistics of Hofmeier with those of Martin, it is seen that in the former there has been 45 per cent. of permanent recoveries, and in the latter 70 per cent. As to the charge that there is much greater immediate danger from the complete operation, the statistics of Martin and Fritsch for the past two years furnish a sufficient denial. The assertion that removal of the entire uterus removes the possibility of conception and child-bearing is counterbalanced by the fact that those who have become pregnant after the partial operation have always aborted. As an illustration that it is impossible to distinguish clinically the limits of carcinoma of the cervix, the author cites three cases which came under his observation. In a woman who had reached the sixth month of pregnancy, carcinoma of the anterior lip of the cervix was diagnosticated, and the lip was excised. Normal labor occurred at term. Three years and a quarter later, carcinoma appeared in the posterior lip. The uterus was extirpated, and there has been no recurrence. In a woman, forty-seven years of age, a tumor of the cervix as large as an apple, and apparently well defined, was observed. After total extirpation, it was found that the disease had gone beyond the os internum. In a third case, in which extirpation was performed on account of a very small superficial carcinomatous growth of the cervix, a small carcinomatous nodule was also found at the fundus. Clinical facts teach us that the greatest care and attention should be paid to cases in which there are catarrh and erosion of the uterus. If a nodule is at any time discovered, it should be at once excised, and examined microscopically for carcinomatous elements. By this method the disease may be discovered, in many cases, in its early and curable stage.

The Treatment of Mammary Tumors.—Fagan ("Dublin Jour. of Med. Sci.," January, 1888). The author considers his subject under three heads, according as are concerned: 1. Tumors potentially malignant, but usually classed as non-malignant. 2. Well-defined malignant tumors that are usually subjected to operation. 3. Tumors in a very advanced stage, ulcerating, or accompanied by great cachexia, that are usually considered unfit for operation. Beginning with the third variety, the indications are to relieve pain, to neutralize the offensive odor, and prevent and restrain hæmorrhage. For the first indication preparations of opium, belladonna, and stramonium, either locally or internally, or both, and ice-bags to affected parts, are recommended. For the second, Esmarch's powder is suggested, containing one part each of arsenic and muriate of morphine, eight of calomel, and forty-eight of powdered gum arabic, of which half a teaspoonful may be sprinkled upon the wound daily. To arrest hæmorrhage, any of the approved styptics may be used, and even if the case is well advanced it is advised to remove the growth, in most cases, for its palliative effect. For the second variety the author recognizes but one course as suitable—the complete removal of the disease by a cutting operation at as early a period as possible. The subsequent recurrence of the disease is not necessarily a contra-indication to subsequent operations. It is admitted that certain cases are not suitable for the knife, and may be attacked by caustics or cautery. In the third variety the treatment should be influenced by the age of the patient and the progress of the growth. In very young girls it is thought that the growth is invariably fibromatous, and will disappear by suitable general and local treatment. Compression has been found a very efficient method of treatment, and is recommended with great confidence by Paget. The conclusions are as follows: 1. In many of the very worst forms of advanced, painful, ulcerating scirrhus, where there is no immediate danger of death from marasmus or visceral complications, the breast may be removed with great benefit and relief to the patient. 2. All cases of malignant growths of the breast should be operated upon as soon as diagnosticated, the removal being made as thorough as possible. 3. All doubtful cases should be similarly treated. 4. All recurrent growths should be removed at their earliest manifestation. 5. All non-malignant neoplasms should be removed as soon as they show a tendency to enlarge, especially in women between twenty-five and forty years of age.

The Treatment of Fibroid Tumors of the Uterus by Electricity.—Skene Keith ("Edinburgh Med. Jour.," Feb., 1888). The author observed that there now seemed to be a possibility that operations for the removal of fibroid tumors of the uterus or for checking their growth might have to be abandoned for safer means of treatment, which seemed to be provided by the suitable use of the electric current. The method which is advocated is that of Apostoli, which the author believes should be closely followed, at least until one has acquired a very thorough knowledge of the results which are to be obtained by it. Six cases are narrated in which tumors giving rise to a great deal of trouble in the shape of pain, hæmorrhage, or inconvenience from size, were treated after Apostoli's method, the current not exceeding 200 milliampères and the sitting continuing five minutes. There was no bad result in any case, and no suspension of the ordinary duties. In all cases the bad symptoms disappeared and the patients, to that extent at least, were cured.

The Significance and Localization of Pain in Pelvic Disease.—Coe ("Gaillard's Med. Jour.," Feb., 1888). This important subject, which involves so much that is obscure, is treated in a very suggestive and thoughtful manner in this paper, the deductions of which are: 1. That pelvic pain has its origin more often in the perimetric tissues than in any particular organ, being due to irritation of nerve-trunks rather than nerve-endings. 2. That the reflex or transferred pains, commonly referred to certain lesions in the pelvic organs, may radiate from inflammatory foci in the peritonæum or connective tissues surrounding those organs. 3. That operations upon, or complete removal of, such diseased organs may fail to remove the pain for the reason stated. 4. That this pain, like other nerve-pains, may be sensibly relieved by the proper application of electricity.

The Use of the Curette for the Relief of Hæmorrhage due to Uterine Fibroids.—Coe's conclusions ("Medical Record," Jan. 28, 1888) are as follows: 1. The hæmorrhage in cases of fibroid tumor of the uterus has its source, not in the tumor itself, but in the hypertrophied endometrium. 2. The hæmorrhage is not directly proportionate to the size of the tumor, but to the extent of the mucous surface. Venous obstruction and the menstrual congestion in the mucosa are the chief active causes. 3. In certain cases the hæmorrhage can be diminished for a considerable period by thoroughly scraping away the hypertrophied endometrium, and repeating the operation as often as may be necessary to keep the menorrhagia under control. 4. Curetting is merely a palliative measure, but it may enable the patient to survive until she is relieved at the menopause, whereas radical operations too often result fatally. 5. Curetting in these cases should be regarded as an experiment which, however, is so harmless and so frequently successful that we are justified in giving it a fair trial before advising oophorectomy, myomotomy, or supravaginal amputation. 6. The use of the curette requires no special skill. It is an operation for the general practitioner, and is much more rational than to allow the patient to become exhausted by repeated hæmorrhages which medication and other palliative measures are powerless to control.

Latent and Chronic Gonorrhœa in the Female Sex.—Noeggerath ("Deutsche med. Wochen.," 1887, No. 49). This continuation of a subject which was opened to the medical profession by the author in 1872 was read before the Section in Dermatology and Syphilidology at the sixtieth meeting of the Association of German Naturalists and Physicians. The conclusions refer to the signs or symptoms by which chronic gonorrhœa in the female may be recognized, and are the following: 1. The disease manifests itself shortly after marriage in women who have previously been healthy, by disorder of the sexual apparatus, with which is usually associated a disturbance of the general condition which is entirely out of proportion with the apparently slight changes in the sexual organs. 2. There is a purulent discharge with absence of deep ulcerations, granulations, sarcoma, or carcinoma, or there is a glairy, scanty secretion, with a deep-red erosion around the os uteri. 3. Catarrh of the ducts of the vulvo-vaginal glands. 4. Small, pointed condylomata at different sites upon the entrance to the vagina. 5. A circle of small, pointed condylomata around and in close proximity to the anus. 6. The presence of granular colpitis. 7. Evidence of salpingo-perimetritis; or, 8. Glandular ovaritis. A single one of these symptoms has no decisive value, but if several of them are combined the question can be decided.

[We think we appreciated the value of Dr. Noeggerath's contribution to the subject of gonorrhœa in the female in 1872, and again in 1877, and took occasion several years ago to call attention to some of his statements concerning which the skepticism of earlier days has passed away. We must confess that we do not feel that he has made out a clear case in this paper for chronic gonorrhœa. What clinical means can there be of distinguishing glandular from interstitial oophoritis? Indeed, it is not hazarding much to affirm that in the vast majority of cases of so-called oophoritis in which there is no decided enlargement or displacement of the organs the diagnosis is a hypothetical one. That chronic gonorrhœa may persist for a very long period without involvement of the uterus, its appendages, or its coverings, that it may subside under proper treatment and recur repeatedly, we are certain from clearly marked cases, and in this respect Dr. Noeggerath's definitions and conclusions are lacking in comprehensiveness. As to signs 2 to 6, inclusive, they can not be called distinctive of chronic gonorrhœa; with the exception of the fifth (which we have never seen), they describe symptoms which are extremely common in acute gonorrhœa. We are glad to see that the author admits that in a very large number of cases the diagnosis must be made exclusively of the demonstration of gonococci—in other words, he agrees with the statement made by Sänger and others that it must usually rest upon a clinical basis. He has also receded from what he properly calls his *pessimistic standpoint* in believing that 90 per cent. of all husbands who have once had gonorrhœa communicate it to their wives. This proposition was the least tenable of any in his original essay, and coincided with the experience of few, if any.]

Treatment of Endometritis by Curetting of the Uterus.—Delefosse ("Jour. de médecine de Paris," Nov. 20, 1887). Among recent gynæcological writers there is a difference of opinion concerning the value of this operation. Schröder was an earnest advocate of its usefulness; Doléris, Playfair, and Tilt are also mentioned as approving and frequently practicing it for endometritis, either alone or in conjunction with intra-uterine applications. Emmet is positive as to its limited usefulness, and in his extensive experience has found other more satisfactory means of treating this condition. The author admits that in some cases it is of service, but denies that it is the best means of treatment, or that it should be used for all forms and degrees of endometritis. That endometritis is the initial lesion in all cases of metritis, as maintained by some writers, is not considered proved, and the same may be said in regard to the bacterial origin of the disease, with the exception of the gonorrhœal form. Even if the disease is local, the tissues involved may be destroyed as well by local applications as by the use of a cutting or bruising instrument. An operation analogous to curetting would not be thought of for the analogous disease of the urethra or the conjunctiva. De Sinéty and Ruge describe endometritis as glandular or interstitial. In the former the glands are increased in number or in volume; in the latter there is an increase of connective tissue. The two varieties may be combined, and the mucous membrane may be atrophied to such an extent that the uterine cavity is lined only by a layer of connective tissue. With such conditions what advantage would be gained by curetting? Hence the operation should be performed only after careful discrimination. Even in the hyperplastic variety of the disease it is thought that the superabundant tissues will be more effectually met by the penetrating action of a suitable liquid application. The disease is not believed to be so frequent as is commonly supposed, especially the chronic form of endometritis of the body. The frequency of septic and inflammatory accidents as a result of the operation should also serve as a warning against its injudicious performance.

Miscellany.

The New York State Medical Association.—The fourth annual meeting of the Third District Branch was held in Norwich on Thursday, the 21st inst., under the presidency of Dr. Charles W. Brown, of Elmira. The programme included the following titles:

"A Memorial Sketch of Frederick Hyde, M. D.," by Dr. Caleb Greene, of Homer; "A Memorial Sketch of H. C. Hall, M. D., of Lisle," by Dr. S. P. Allen, of Whitney's Point; "The Prophylaxis of Nasal Affections," by Dr. Reuben Jeffery, of Brooklyn; "Electrolysis in Surgery and in Gynæcology," by Dr. Robert Newman, of New York; "The Ætiological Treatment of Convulsions," by Dr. H. D. Didama, of Syracuse; "Shall Surgical Instruments be Patented?" by Dr. T. H. Squire, of Elmira; "Tracheotomy in Croup," by Dr. Nathan Jacobson, of Syracuse; "Marasmus," by Dr. William B. Morrow, of Walton; "Special Notes of a Case, with Comments on Pelvic Cellulitis," by Dr. C. L. Squire, of Elmira; "The Use of the Dilator and Intra-uterine Stem in the Treatment of Dysmenorrhœa and Sterility," by Dr. A. H. Goelet, of New York; "Fistulo in Ano dependent on Tuberculosis of the Ischio-rectal Fossæ," by Dr. Henry L. Elsner, of Syracuse; "Mountain-Climbing as a Cure for Consumption," by Dr. Theron A. Wales, of Elmira; "Arm Presentations," by Dr. Florence O. Donohue, of Syracuse; "Cerebro-spinal Meningitis (Epidemic of thirty years ago)," by Dr. E. S. Lyman, of Sherburne; "Cerebro-spinal Meningitis (Epidemic of 1888)," by Dr. L. J. Brooks, of Norwich; "The Treatment of Cerebro-spinal Meningitis," by Dr. B. J. Ormsby, of Norwich; "Inhalations of Steam in Capillary Bronchitis," by Dr. J. H. Martin, of Otego; "Exophthalmic Goître," by Dr. L. P. Blair, of McDonough; "Chronic Bright's Disease, its Causation, Course, and Treatment," by Dr. B. A. Church, of Oneonta; and "A Case of Puerperal Pulmonary Embolism," by Dr. Thurston G. Packer, of Smyrna.

The American Association of Obstetricians and Gynæcologists will hold its annual meeting in Washington, on the 18th, 19th, and 20th of September. The preliminary programme includes: The president's annual address, by Dr. William H. Taylor, of Cincinnati; a discussion on extra-uterine pregnancy; "The Relations of the Abdominal Surgeon to the Obstetrician and Gynæcologist," by Dr. Albert Vanderveer, of Albany; "An Operation for an Unusual Case of Subserous Uterine Fibroid," by Dr. Hampton Eugene Hill, of Saco, Me.; "Drainage in Abdominal and Pelvic Surgery," by Dr. Joseph Price, of Philadelphia; "Double Ovariotomy during Pregnancy, a Successful Case going on to Full Term," by Dr. William Warren Potter, of Buffalo; "The Indications for Artificial Aid in Labor," by Dr. Thomas Opie, of Baltimore; "The Technique of Vaginal Hysterectomy," by Dr. James H. Etheridge, of Chicago; "The Surgical Treatment of the Perinæum," by Dr. William H. Wathen, of Louisville; "Laparotomy in Peritonitis," by Dr. E. E. Montgomery, of Philadelphia; "Tumors of the Abdominal Wall," by Dr. Charles A. L. Reed, of Cincinnati; "Uterine Fibroids; their Diagnosis and Treatment," by Dr. Thomas J. Maxwell, of Keokuk; "Desmoid (Fibroid) Tumors of the Abdominal Walls," by Dr. Edward J. Ill, of Newark; "Ruptured Perinæum," by Dr. J. Henry Carstens, of Detroit; "A Contribution to the Study of Pelvic Abscess," by Dr. Clinton Cushing, of San Francisco; "The Female Perinæum; its Anatomy, Physiological Function, and Methods of Restoration after Injury," by Dr. Henry O. Marcy, of Boston; "Heart Failure in the Puerperium," by Dr. Thomas Lothrop, of Buffalo; "The Treatment of Suppurative Peritonitis," by Dr. William H. Myers, of Fort Wayne; "Operative Treatment in Uterine Carcinoma," by Dr. George R. Shepard, of Hartford; "The Reflexes Reflected, or Some Things that Retard Progress in Gynecic Surgery," by Dr. Joseph Eastman, of Indianapolis; "Some Points in relation to the Diagnosis of Pregnancy in the Early Months," by Dr. James P. Boyd, of Albany; "Vaginal Tamponnement in the Treatment of Prolapsed Ovaries," by Dr. W. P. Manton, of Detroit; and "The Methods of Success in Abdominal Surgery," by Mr. Lawson Tait, F. R. C. S. E., of Birmingham, England.

The New York Academy of Medicine.—The Section in Pædiatrics will meet on Wednesday evening, the 27th inst. The programme is as follows: "Remarks on Summer Complaint," by Dr. A. Jacobi; "The Dietetic Management of the Summer Diarrhœa of Infants," by Dr. A. V. Meigs, of Philadelphia; "A Clinical Study of the Ætiology and Treatment of the Summer Diarrhœa of Infants," by Dr. S. Baruch; and "The Relative Digestive Power of the Pepsins in Common Use, and the Action of the Drugs employed in the Treatment of the Summer Diarrhœa upon Digestion," by Dr. George B. Fowler.

The Yale Medical Society, of New Haven.—On Tuesday, the 26th inst., at noon, Professor William H. Welch, of the Johns Hopkins University, Baltimore, will deliver an address in medicine before the society, in Battell Chapel. In the evening a reception to Dr. Welch will be given by Dr. William H. Carmalt.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality," for the month of May, the whole number of deaths during the month was 504, including 6 from cholera infantum, 21 from croup and diphtheria, 5 from cerebro-spinal meningitis, 2 from erysipelas, 1 from typhus, 12 from typhoid fever, 1 from malarial fever, 1 from measles, 2 from pyæmia, 1 from whooping-cough, 3 from syphilis, 4 from septicæmia, 5 from scarlet fever, and 2 from small-pox.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 15th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending May 26th corresponded to an annual rate of 17·8 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 10·9, and the highest in Preston, viz., 27·8 in a thousand. Small-pox caused 3 deaths in Sheffield, 1 in Bristol, 2 in Preston, 1 in Oldham, and 1 in Hull.

London.—One thousand three hundred and sixty-one deaths were registered during the week, including measles, 23; scarlet fever, 17; diphtheria, 19; whooping-cough, 64; enteric fever, 10; diarrhœa and dysentery, 9; and choleraic diarrhœa, 2. The deaths from all causes corresponded to an annual rate of 16·6 in a thousand. Diseases of the respiratory organs caused 228 deaths; different forms of violence, 65; and 9 suicides were registered. In greater London 1,689 deaths were registered, corresponding to an annual rate of 15·9 in a thousand of the population. In the "outer ring" 19 deaths from whooping-cough were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending May 26th in the sixteen principal town districts of Ireland was 23·3 in a thousand of the population. The lowest rate was recorded in Galway, viz., 3·4, and the highest in Drogheda, viz., 42·3 in a thousand. In Dublin 165 deaths were registered, including measles, 2; whooping-cough, 7; enteric fever, 1; scarlet fever, 5; and diarrhœa, 2.

Scotland.—The deaths registered in eight principal towns during the week ending May 26th corresponded to an annual rate of 20·9 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 11·2, and the highest in Perth, viz., 25·6 in a thousand. The aggregate number of deaths registered from all causes was 529, including measles, 13; scarlet fever, 10; diphtheria, 1; whooping-cough, 11; fever, 6; and diarrhœa, 10.

Tokio, Japan.—The United States minister, in his dispatch dated May 9, 1888, transmitted copies of a printed pamphlet entitled "A Brief Review of the Operations of the Home Department in Connection with the Cholera Epidemic of the 19th year of the Meiji (1886)." The following is an extract from the introduction to the pamphlet:

"The cholera epidemic of the 19th year of Meiji (1886) was the most violent and malignant since that of the 12th year of Meiji (1879), there being 155,574 cases, among which 110,086 were fatal. Indeed, there were only 17 days in the whole year when there were no cases.

"The epidemic spread over the whole country, an area of 3 fu 41 ken, and even Hokkaido suffered from its invasion; but it was most violent in Osaka, Ishikawa, Toyama, Tokyo, Fukui, and Niigata. The kens of Kagoshima and Miyazaki and the northern part of Hokkaido were the only localities which escaped its ravages.

"As to the cause of its outbreak and propagation, accurate evidence is wanting; it is an undeniable fact, however, that it sprang and was propagated from the widely spread germs of the disease which had lain dormant in Osaka the preceding year, there being no trace of a fresh introduction. Osaka, in the autumn of the preceding year, had been invaded by the disease from Nagasaki; but after some thirty days of prevalence the epidemic gradually declined with the approach of the colder season, though it did not then entirely disappear. One or two cases kept occurring continually over into the next year, until on the 2d of January there were five cases reported in the western and southern districts of the city and in the ku of Sakai. On the 3d, five more cases were reported in the three ku of the West, South, and North and the ku of Sakai. From this time forward the number of cases gradually increased until the approach of the warmer season, toward the end of April, when it had spread all over the city, where it raged up to the end of October. During the epidemic there were ninety-nine days in which the daily number of cases reported was over one hundred, and four days when there were two hundred. Indeed, it was the most severe epidemic ever known in Osaka.

"The situation of Osaka is such that it undoubtedly favors the propagation of an epidemic, for the water of the Yodo River, being conducted through the city by canals in various directions, besides furnishing a convenient roadway for transportation and water traffic, also receives the contents of the drains of the city, while at the same time it supplies the city with drinking-water.

"The wells, keeping the same level with the canals, freely communicate with each other, and thus the drinking-water of the city is more or less mingled with the water of the drains. Such, then, being the situation of Osaka, when an epidemic appears the same convenience for the transportation of goods furnishes an easy medium for the propagation of disease. It is not strange, then, that since the tenth year of Meiji (1877) whenever an epidemic prevails the city has been a center of the epidemic. Moreover, in the preceding year there was much rain after the spring until finally, in June, the Yodo River overflowed its banks, inundating the streets and houses. Hence the city was rendered very filthy, in consequence of which the concealed germs found a favorable nidus from which the disease appeared with the return of the warm weather, and finally ravaged the whole city. It is also to be borne in mind that, as Osaka is the commercial center of Japan and has free communication in every direction, it is likely to become the cradle of epidemics, and, therefore, whatever has made its appearance in various other localities has had its origin directly or indirectly in Osaka."

Callao.—The United States consul, in his dispatch dated May 3, 1888, transmits a copy of a translation of a decree issued on the 2d instant by the government. The following is a copy of the translation:

Lima, *May 1, 1888.*—Having examined the resolution adopted by the supreme board of health, the same is hereby approved and it is declared—

1. Vessels arriving from Atlantic, with clean bills of health and in voyage for Peru, will be received in all the sea-ports without undergo, ing quarantine, if they may not have touched in those ports of Chili where the cholera made its appearance.

2. These vessels, (although) when they may have touched in ports where the epidemic has disappeared, shall be admitted after a quarantine of observation and disinfection, in the event that during the voyage no case of cholera may have occurred on board.

3. Vessels proceeding from Chilian ports which may have escaped the cholera, and which, before commencing their voyage, had not traded at infected ports, shall be received as those mentioned in the first article of this decree.

4. Vessels arriving from Chilian ports where the epidemic has disappeared, but where it existed for some period of time, will only be admitted to Peruvian ports if they have been disinfected before commencing their voyage, which must appear from a certificate of the medical man on board, and on arrival shall be subjected to a quarantine of at least five days, and be again disinfected before being placed in free pratique.

5. Passengers and European merchandise arriving from Arica and uninfected Chilian ports shall be received without detention.

6. Passengers and merchandise arriving from Chilian ports where only recently the cholera has disappeared shall be received in Peruvian ports under the conditions stipulated in Article 4.

7. Vessels arriving from infected Chilian ports shall not be received at present in the Peruvian ports, and under this are comprehended the vessels proceeding from the district to the north of Valparaiso up the Antofagasta, excepting these two ports.

8. The terms for the reception of these ships shall be fixed by the board of health, according to Article 42, paragraph 8 of the regulations.

This ordinance goes into effect from the date hereof.

Ceara, Brazil.—One hundred and sixty-five deaths were registered during the month of April, including 11 from yellow fever.

Catania, Italy.—Two hundred and ninety-six deaths were registered during the month of March, including small-pox, 6, and enteric fever, 8.

Havana.—Four hundred and fifty-one deaths were registered during the month of May, including yellow fever, 27; enteric fever, 4; so-called pernicious fever, 14; small-pox, 29; diphtheria, 1; croup, 5; and measles, 1. Over 75 per cent. of the deaths from yellow fever occurred at the military hospital. The sanitary inspector states that "up to the present time yellow fever shows little or no tendency to spread, and the cases which occur are confined to old, well-known insanitary places, infected fortifications, and the immediate vicinity of wharves on the Havana side of the harbor. Small-pox continues to diminish in Havana and suburbs."

Mortality Table, Foreign Cities.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	May 26.	2,260,945	939	..	....	6	....	11	4	38
Glasgow	May 26.	545,678	257	..	....	....	....	3	9	....
Warsaw	May 19.	444,814	303	..	....	1	....	....	6	11
Calcutta	April 28.	433,219	240	69	....	..	....	....	....	....
Amsterdam	May 26.	389,916	142	..	....	....	....	1	....	2
Rome	April 7.	388,300	166	..	....	....	....	2	....	....
Rome	April 14.	388,300	180	..	....	5	....	3	....	2
Copenhagen	May 22.	300,000	168	..	....	....	....	1	1	6
Munich	May 19.	275,000	183	.	....	....	....	1	1	3
Edinburgh	May 19.	262,733	104	..	....	....	....	1	....	2
Palermo	May 26.	250,000	......	..	....	....	....	1	2	2
Genoa	May 26.	179,504	107	..	....	....	....	....	....	....
Leipsic	May 26.	170,000	55	..	....	...	....	....	2	3
Stuttgart	May 26.	125,510	43	..	....	....	....	...	....	1
Toronto	June 2.	130,000	40	..	....	....	....	....	....	....
Bremen	May 24.	122,000	60	..	....	....	....	....	....	....
Havre	May 26.	112,074	55	..	....	3	....	2	1	....
Pernambuco	May 8.	110,000	114	..	1	....	1	5	....	....
Pernambuco	May 15.	110,000	66	..	1	....	2	4	....	....
Leghorn	May 27.	101,718	45	..	....	....	....	....	....	....
Mayence	May 19.	65,802	52	..	....	....	....	....	....	....
Merida	May 27.	48,800	39	..	...	....	....	....	....	....
Cienfuegos	May 28.	40,753	21	..	....	11	....	....	....	....
Guayaquil	April 22.	35,000	62	..	4	4	....	30	....	....
Guayaquil	April 29.	35,000	52	..	6	4	....	21	....	....
Vera Cruz	May 31.	23,800	18	..	....	....	....	....	....	....
Gibraltar	May 20.	23,631	11	..	....	....	....	....	....	....
St. Thomas	May 18.	15,000	4	..	....	....	....	..	....	....
Cape Haytien	June 2.	15,000	6	..	....	....	....	....	....	....
Cartagena, Col'a.	May 19.	13,000	7	..	....	....	....	....	....	....
Turk's Island	May 23.	4,732	4	..	....	....	....	....	....	....
Paita	May 12.	4,000	......	..	....	....	....	....	....	....
Livingston	May 26.	2,500	2	..	....	...	....	....	....	....
S'n Juan d'l N'rte	May 7.	500	1	..	...	....	....	...	....	....

UNITED STATES.

San Francisco.—Eight cases and 2 deaths from small-pox are reported for the month of May, 1888.

Notice.—After July 1, 1888, a mortality table of American cities will be inserted in the abstract. Registrars and health officers are respectfully requested to furnish weekly statements in exchange.

THERAPEUTICAL NOTES.

Squibb's May-Apple Pills.—In the June number of the "Ephemeris of Materia Medica," etc., Dr. E. R. Squibb gives the following formula for the pills commonly known as may-apple pills, or podophyllum pills:

Resin of podophyllum	¼ grain;
Alcoholic extract of hyoscyamus	1 grain;
(or alcoholic extract of belladonna	⅛ grain);
Powdered capsicum, Powdered sugar of milk, } each	1 grain;
Powdered acacia	¼ "

About a third of a grain of glycerin is added to keep the pills soft, and syrup is used in making up the mass. Nowhere, says Dr. Squibb, are the pharmacist's knowledge and skill so necessary as in making such pills. They should never be coated. They are used as an aperient where the upper part of the intestinal tract is at fault, perhaps from sluggishness of the liver, and are given at bedtime—seldom more than one at a time. "No effect need be expected on the day following," says Dr. Squibb, "but the second or third pill at bedtime will pretty surely give some effect on the third or fourth day. Then usually one dose at bedtime is to be omitted, and . . . two doses a week will be sufficient during the next week, one dose a week for the third week, and finally none."

Common Salt in the Treatment of Sick Headache.—Dr. Batour ("Jour. des sci. méd. de Lille"; "Lyon méd.") states that he has accidentally discovered the virtues of common salt in the treatment of migraine. As soon as the first symptoms of an attack are perceived, half a spoonful or a spoonful [whether a teaspoonful or a tablespoonful, is not stated] should be swallowed dry, and then a mouthful of water. Generally the threatened attack is aborted or much shortened. Six cases are reported, all successful. The author attributes the effect to reflex action.

ANSWERS TO CORRESPONDENTS.

No. 195.—Early in September.

No. 196.—Evaporate the balsam to a dry, brittle mass over a water-bath, and then dissolve it in benzene.

No. 197.—We think you did right.

No. 198.—Our impression is that such a book was published by Messrs. J. H. Vail & Co., of Astor Place, New York.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

THE NEW YORK MEDICAL JOURNAL, June 30, 1888.

Original Communications.

ELECTROLYSIS IN UTERINE FLEXIONS.

By EGBERT H. GRANDIN, M. D.

The use of electricity in the routine treatment of the diseases of women, although slowly gaining ground, has by no means as yet received the recognition to which it is justly entitled. For some reason or other, possibly the impression that the application requires deep study and the expenditure of much time, the specialist and the practitioner are very slow to accept as facts the favorable data which are daily accumulating in evidence of the marked relief which very frequently follows the intelligent resort to this most valuable therapeutic agent. I have elsewhere stated the deductions which my experience has taught me are warrantable in connection with certain of the inflammatory affections to which woman is liable, and my sole purpose in this brief article is to add further testimony to that which already exists in regard to the results obtainable in cases of uterine flexions.

As to the pathological factor which is at the basis of the symptoms that in some women accompany the presence of a flexion it is useless to theorize. Whether or not the dysmenorrhœa—the most marked symptom—is the result of stenosis somewhere in the cervical canal, or of an hyperæsthesia at the level of the internal os, due to morbid structural change, or is the accompaniment of changes in the tissues surrounding the uterus, matters not for my present purpose. Sufficient the statement that in many women with a uterine flexion labor cures the dysmenorrhœa, and the corollary must stand that this is possibly partially in consequence of the dilatation to which the cervical canal has been subjected during childbirth. When, therefore, a woman presents herself for treatment for dysmenorrhœa, we find a flexion of greater or less degree, and the symptom does not yield to the general measures which suggest themselves, we not unnaturally resort to dilatation. This step rarely fails, in well-selected cases, to cure the symptom. Of the dilating means at our disposal, the one chiefly favored to-day is divulsion by steel-branched dilators, followed or not, according to individual preference, by the insertion and the more or less prolonged wearing of a stem-pessary. This method offers certain disadvantages, such as the necessity of anæsthesia, rest in bed for a number of days thereafter, and the fact—very exceptional, true enough, where the requisite precautions are taken—that it may be followed by perimetritis or parametritis. Further still, where a stem-pessary is inserted, the latter complication may at any time develop, in particular if the uterus happens to be of the kind we now and then meet with which is intolerant of the presence of a foreign body within its cavity. Such being the objections which I doubt not even the most pronounced advocates of divulsion will grant, it remains to advance the merits of a method which a somewhat prolonged experience satisfies me is safe and effective.

The value of electrolysis in causing the absorption of plastic deposit, and the incontestable ability of this property of the electric current to overcome stenosis in case of stricture of the male urethra, very naturally suggest its utility in similar conditions in the female. The statements which have been advanced in its favor by a number of workers in the fruitful and by no means thoroughly tilled field of gynecic electrotherapy I have been enabled to amply satisfy myself are warranted, with the result that, given to-day an instance of uterine flexion accompanied by symptoms fairly attributable to the distortion, and my choice in treatment would be electricity. The technique of the method is simple, painless, and applicable in one's office without the expenditure of overmuch time. Furthermore, it hardly rises to the dignity of being called an operation, something from which many a patient will shrink. The risk the patient runs of the development of any inflammatory sequela may with justice, I think, be stated as *nil*. The insertion of a stem-pessary is not called for. The canal once opened, the hyperæsthesia once abated, the endocervical catarrh, which is not infrequently a complicating factor, once cured—and all this is possible through electrolysis—the patient's symptom, dysmenorrhœa, disappears, and, so far as it is dependent on the flexion, not to return. These statements which I advance any one is in a position to verify for himself if he possesses a galvanic battery and the requisite electrodes. A convenient internal electrode, in that it has the requisite degree of flexibility, is the steel-bulb sound used in the exploration of the male urethra. The shaft may be effectively and cheaply insulated by rubber tubing. In the nullipara, having previously determined the degree of flexion by the sound in order to give the electrode the proper curve, I am in the habit of electrolyzing with the patient in the dorsal position and without the insertion of a speculum. Where the external os is very small and the cervical canal tortuous, the ordinary Simpson sound, insulated within an inch and a half of its tip by rubber tubing, has answered very well in my hands as the smallest electrode. The size of this sound corresponds to about a No. 9 French scale bougie, and the largest electrode I have thus far found it essential to use has been the No. 22 French scale bulb. The external electrode is placed over the fundus of the uterus and may consist of the ordinary sponge, or else, and this is more cleanly, of an oval or circular tin disc covered with cotton or rough toweling. This electrode is connected with the positive pole of the battery and the internal electrode with the negative. As regards the current strength necessary for effective action, opinion varies. Personally, I have not found it requisite to bring more than eight to ten cells* into the circuit, where the battery is freshly filled. The main rule for guidance is to proceed slowly and to use only that current strength which is found sufficient to cause the bulb to work its way along the canal. The séance need not be prolonged beyond ten minutes, and the average number sufficient to dilate to the requisite degree may be stated as about ten. Thereafter, if the patient is seen once or twice before each menstrual period for two to three months, she may be dismissed as cured.

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* I am aware that this expression is open to criticism on the score of scientific inaccuracy, but I use it advisedly since but few of my readers possess a milliampèremeter.

While I would not be understood as lauding this method above all others, it is my desire to maintain for it a high rank in uterine therapy. Especially is it of value in case of those sufferers from dysmenorrhœa associated with flexion, whom, being unmarried, one is naturally loath to subject to the specular distension of the vulva which divulsion entails. In such instances, constitutional measures having failed in giving relief, instead of writing a prescription for morphine or antipyrine to be taken at the menstrual period, let the practitioner cocainize the introitus and hymen, pass the smallest bulb, guided by his finger, to the internal os, and use the proper current strength, and he will be amazed at the ease and freedom from pain with which, successively, he will be enabled to dilate the cervical canal to the degree requisite for giving the patient immunity from pain during menstruation.

My object in this paper having been simply to record my individual impression in regard to the value of this method of treatment, I have deemed it unnecessary to insert illustrative cases or to refer by name to the workers in the same direction whose results are in accord with mine.

109 East Fifty-fourth Street.

OBSTETRIC METHODS IN PRAGUE.

By HENRY H. MORTON, M. D.,
BROOKLYN.

During the winter of 1885–'86 it was my privilege to live in Professor Breisky's clinic at the Maternity Hospital in Prague, Austria. This institution ranks second in size to the one at Vienna, three thousand births occurring in it annually, one third of this material being under Professor Breisky's charge at the time of my residence there. Some account of the antiseptic and other methods followed in the hospital may be of general interest.

The first essential in carrying out antisepsis is, of course, the thorough cleansing and disinfection of the hands of physicians and nurses. Before examining a woman in labor, the nails are cut and cleaned and the hands and arms scrubbed with soap and water and a brush. This is followed by irrigation with corrosive-sublimate solution (1 to 1,000), and the hands are held in a basin of sublimate solution (1 to 1,000) for a minute or so. Instruments are allowed to remain half an hour in carbolic-acid water after being used. Catheters are boiled half an hour in a 5-per-cent. carbolic-acid solution and cleaned internally with a brush. The catheters are specially made, the eye being double and going directly through the catheter, and the portion above the eye being filled in with lead, allowing no crevice for the collection of dirt. The external genitals are carefully washed with carbolic-acid solution, before the catheter is passed, to remove mucus which might be carried into the bladder before it. Cystitis seldom occurs, and then only when the catheter is not clean. Hypodermic needles are heated in the flame of the gas, and before giving an injection the skin is washed. Small instruments, such as dressing forceps, are also held in the gas flame.

The following antiseptic precautions are adopted with regard to the patients: Upon their entering the hospital and before the first examination is made the vagina is irrigated with corrosive-sublimate solution (1 to 2,000). Patients are not irrigated daily unless they have some abnormal secretion, such as leucorrhœa. Upon the beginning of labor the vagina is irrigated before the first examination. The irrigation is not repeated during the course of the labor unless a number of students have examined, the patient has fever or hæmorrhage, or there is an indication for the use of instruments.

After the birth of the child the external genitals alone are washed, and the vagina is not irrigated in normal cases. When, however, any considerable laceration of its structure has taken place or instruments have been used, irrigation is employed. The uterus is never washed unless it has been operated upon, as in applying the forceps with the child high up, or in perforation or craniotomy.

The uterus is never washed with bichloride, carbolic-acid solution being always used in the strength of 3 per cent. for prophylaxis, or, when infection is present, 4 to 5 per cent.

After every uterine irrigation two iodoform suppositories are introduced into the uterus. All wounds of the genital passages are sewed up and dressed with iodoform.

After the birth of the child and before the placenta has come away the vulva is covered with a sheet of cotton soaked in chlorine water, which is left till soiled, and then replaced by a fresh one. This is changed every two hours at first, and afterward three times a day. Before the birth the genitals are washed with soap and sublimate solution. During the puerperal state the external genitals are washed with sublimate, but the vagina is not irrigated while the patient is doing well.

Foul-smelling lochia, a discharge too profuse in quantity, and the continuance of blood in the flow for a longer time than normal, are considered indications for irrigating the vagina either with carbolic-acid or corrosive-sublimate solution. The sublimate is never used when the patient is excessively anæmic or is suffering from kidney disease or diarrhœa. When the discharge is normal in character but profuse in quantity, an astringent—either alum or acetate of lead—is used as an injection. The uterus is never washed out without an indication, as, for example, if the patient has fever or endometritis, or the membranes or placenta are retained. Carbolic-acid solution from 3 to 4 per cent. is made use of in such cases.

In examining a patient with septicæmia, if, upon the introduction of the speculum, any portions of the vagina are found covered with diphtheritic deposit, the vagina is first irrigated, and then the patches of exudate are touched with tincture of iodine. When everything has been made clean, so that nothing septic can be introduced into the uterus, that organ is examined.

The rooms for puerperal cases, each one containing six beds, are washed once in ten days with soap and water and hypochlorite-of-lime solution. Woven-wire springs are used on the beds, and the mattresses are taken out of doors, beaten, and aired. In the lying-in room the beds are changed daily. In septic cases the rooms are washed as usual, and, in addition, a spray of carbolic acid is used with the atomizer. The bedsteads are put into a room and exposed to a high temperature, the mattresses are beaten and aired, and, if discharges have soaked through the rubber cloth with which each bed is protected, the mattress is burned.

A good deal of weight is laid upon the treatment of the breasts. Upon entering the hospital, each patient has the breasts washed daily with borax-water, 4 per cent. in strength. When a considerable amount of sebaceous secretion is present, upon which the dirt has collected, they are rubbed with a 4-per-cent. borated vaseline to soften the deposit, and then treated as above mentioned.

As soon as the child is born, each of its eyes is treated with a drop of 2-per-cent. nitrate-of-silver solution. The children's mouths are no longer washed, since Professor Epstein, of the Foundling Asylum in Prague, has found that the delicate mucous membrane is apt to be abraded in the washing, and aphthæ form much more readily than upon an unbroken surface. The navels are packed in salicylated cotton, which is changed daily when the child is bathed. Diarrhœa and indigestion in newly born children are treated after a plan suggested and used by Professor Epstein. He supposes that the mother's milk, taken into the stomach by the child and not being digested, undergoes decomposition. Bacteria are produced and act as irritants, exciting a catarrhal inflammation, and keeping it up by their presence. The plan of treatment which he has used for some years past is to wash out the child's stomach, using a small Jaque's catheter, to which are attached a rubber tube and a funnel. The catheter is passed through the mouth and œsophagus into the stomach; the funnel is elevated, and two ounces of plain warm water are poured into the stomach through the funnel, which is then lowered and the water siphoned off. This is repeated several times until the water from the stomach comes away clear. Milk or food is forbidden for twenty-four hours, and the child is given albuminated water, made by mixing water and the white of egg, every two hours, the child taking about sixteen ounces in twenty-four hours. This is given on account of the thirst. The stomach washing is not repeated. When the diarrhœa is very severe, small doses of acetate of lead are given alternately with the albuminated water. Since the adoption of this plan of treatment in this disease the deaths have been much fewer than formerly.

I may here mention incidentally that the administration of ergot, as a routine treatment to favor firm contractions of the uterus, was abandoned in 1882. The patients do as well without it as during its employment, hæmorrhage being no more frequent.

In conclusion, I would say that the utility of the antiseptic precautions is proved by a comparison of the results before and after their adoption. In the old Maternity Hospital, before antisepsis was used, the mortality was from eight to fifteen in a hundred! In the present institution the entire mortality ranges from four to six deaths in a thousand, and the septic mortality is from two to two and a half in a thousand per annum. I should remark here that this hospital is used for teaching purposes, and each patient is examined by from three to six students in addition to the regular staff. Since the present method of treating breasts was begun, eight hundred and forty women had been confined in the hospital at the time of writing, and only two cases of mastitis had occurred, both of which were in patients who had no preparatory treatment, having entered the hospital in labor. Cystitis seldom occurs, and it is then usually traced to an improper cleansing of the parts or of the catheter. The frequency of ophthalmia neonatorum has been greatly diminished under the use of nitrate of silver.

I take this opportunity of expressing my thanks to Professor Breisky and his assistant, Dr. Carl Fleischmann, for the many favors extended to me during my sojourn in Prague.

266 Clinton Street, Brooklyn.

CLINICAL REMARKS ON PROGRESSIVE PERNICIOUS ANÆMIA.

By JOHN A. WESSINGER, M. D.,
HOWELL, MICHIGAN.

Pernicious anæmia is a disease of rather infrequent occurrence, and its ætiology and pathology are at present only partially understood. I therefore feel warranted in reporting the following case:

On October 14, 1887, I was called to see a lady, about fifty-two years old, whose family history was good, and whose health had been excellent during early life. She was married twenty-two years ago, and twenty years ago she was delivered of a healthy boy, the only child she has had. The delivery was followed by extreme post-partum hæmorrhage. She slowly recovered from the immediate effects of this, but did not regain her previous weight and vigor. She attended to the ordinary duties of a housewife, however, until five years ago, when she was suddenly attacked with severe uterine hæmorrhage. An examination by the attending physician revealed nothing abnormal, save a flabby, relaxed condition of the uterine tissues. Under ordinary treatment she recovered from the hæmorrhage, but remained weak and anæmic. The hæmorrhage subsequently recurred at intervals of from nine to twelve months, and she became decidedly anæmic and debilitated. I found her with an extreme waxy hue of the entire integument; the lips and the ocular conjunctiva of a pearly white; the tongue large, clean, moist, and colorless; with slight bleeding from the alveoli and the nasal, pharyngeal, and rectal mucous membranes; unable to walk; her lower limbs œdematous; her bowels constipated; her urine slightly albuminous, but containing no blood; her appetite defective; her respiration 24; her pulse 100; and her temperature 100°. During all the time that she was under my observation her temperature was never below 99·5°. She was very restless at night. Microscopical examination of the blood showed the red blood-corpuscles greatly diminished in number and of various sizes.

She remained in about this condition until January 18, 1888, when the late Professor Edward S. Dunster, of the University of Michigan, was called to see her with me.

After a very careful examination, Dr. Dunster gave me his opinion as follows:

> My dear Doctor: The number of red blood-corpuscles was wonderful, the smallest I have ever found. I fully verify your diagnosis of pernicious anæmia. I have no expectation of recovery in Mrs. J.'s case.
>
> Yours very truly, E. S. Dunster.

I would say in explanation of the foregoing letter that specimens of blood from this patient were sent to the laboratory of the University of Michigan for microscopical examination. The following report from this department, through Professor C. H. Stowell, is appended on account of its bearing on the diagnosis of this form of disease:

> My dear Doctor: Computations give 1,500,000 red corpuscles to the cubic millimetre. You know 5,000,000 is the standard. This is extremely low. The white corpuscles were not so very much in excess as we should expect. I did not compute them. Yours, C. H. Stowell.

Suffice it to say that this patient went from bad to worse until the fatal issue, which took place on the 17th of February. There was no autopsy.

In regard to the ætiology of pernicious anæmia, leaving out hæmorrhage previous to and during the climacteric period as a causative factor, the disease is more prevalent among men than among women, since such predisposing causes as gastric and intestinal dyspepsia and mental and physical over-work are commoner in men than in women. However, hæmorrhage is a very important ætiological factor in this disease, and hence the fact that more women than men die of pernicious anæmia. In the diagnosis the use and value of the microscope should never be lost sight of. The diagnosis lies mainly between the disease under consideration and leucæmia. The microscope, however, makes the way clear, for in pernicious anæmia there is great destruction of the red corpuscles, with little or no increase of the white corpuscles, while in leucæmia there are both destruction of red corpuscles and an enormous increase of leucocytes.

In regard to the symptomatology and pathology of this disease, I can do no better than invite the reader to a consideration of Addison's classical description of the malady. The treatment of this form of anæmia is merely palliative; nothing within the present range of the therapeutist is curative. Probably the most benefit is to be derived from iron, arsenic, mercury bichloride, and hæmocardicin.

A CASE OF WOUND OF THE LIVER AND LUNG.

By A. H. PERFECT, M. B.,
BRIDGEWATER, N. S.

On May 18th, as Captain S., aged forty-five, of Dublin Shore, was crossing a field near his home, with an axe in his right hand, he tripped and fell. The sharp blade of the axe penetrated his right side somewhat anteriorly and at an angle of 30° or thereabouts to the axillary line, severing the eighth rib, wounding the lung slightly, and making a gash in the liver three inches and a half long and three quarters of an inch deep. The bleeding from the liver was very profuse, but it ceased after three very fine sutures had been introduced. A portion of the omentum and the hepatic flexure of the colon protruded from the external opening, and, after the clotted blood had been removed and the protruding viscera thoroughly cleansed, they were with difficulty kept within the abdominal wall while the wound in it was being stitched. The wound of the peritonæum was not closed separately, but by the silk that held the cut edges of the abdominal wall together. The temperature on the third and fourth days was 100°, but it never exceeded that point afterward. Capillary drainage was used, with gauze and carbolic-acid dressings. The stitches were removed on the eighth day. The only difficulty is that sneezing produces a "stitch in the side" at the lower border of the lung. There is weakness from loss of blood, as he was fourteen miles distant when I was telephoned for. The kindly services of a clergyman who was present, and under direction kept up the anæsthesia, were fully appreciated.

ON THE USES OF DEXIA-KEFIR AS A DIETETIC IN DISEASE.

By EDWARD N. LIELL, M. D.

Modern chemistry has, especially of late years, increased our knowledge of food products, their application as dietetics in various diseases, and the physiology of digestion.

In this article I shall consider in a concise form the dietetic application of a preparation but recently introduced into this country, any communication upon which I have failed to find in any of our medical journals.

It is a fact well known to many that ordinary cow's milk when given by the stomach forms a more or less dense curd, rendered all the more insoluble by the fat which forms the greater part of its bulk. It is a mistake to suppose, therefore, that ordinary milk is easy and free of digestion. It is not an ideal form of food for digestion by a delicate stomach, in other words where the digestive powers are impaired or held in abeyance in disease. This being the case, one can readily see the value of such a form of nutriment in most if not every phase of disease where nourishment of a light character, pre-digested, is indicated.

A peculiar fungus ferment, called kefir, a plant indigenous to the Caucasus, is the means by which the character of cow's milk is completely changed, in that both a lacteous and an alcoholic fermentation are set up; added to this is the peculiar action this fungus ferment has upon the casein of the milk, partially digesting it, and thus causing its formation into a peptone. The special advantages of this preparation of fermented milk lie in the fact of a minute subdivision of the casein, entirely free from coagula when shaken, the fact of its being pre-digested, and its agreeable, slightly acid taste.

In the lactic acid we have an additional factor, adding to the activity of the gastric juice, and in this the more complete digestion of this milk. As to the whey, it contains all the lacteal albumin, is a mildly nutritive fluid, and is easy of digestion in itself. The presence of a small percentage of alcohol is just sufficient to give it a mild stimulant and tonic property; and as to the carbonic-acid gas, it is an undoubted fact that its existence in any liquid aids digestion in causing not only an increased secretion of the gastric juice, but favoring peristaltic action as well.

In that ordinary milk has a wide field for action as a dietetic, one can appreciate the advantage of dexia-kefir over the latter, being applicable to a much greater range of cases.

It is immaterial as to what the disease may be; if it is of great severity or more or less prolonged, we are tempted to press nourishment, especially in the form of cow's milk, quite too freely upon the patient, introducing into the stomach a quantity much greater than can be readily digested, the excess curdling in the stomach and acting as a foreign body.

Assuming that the digestive powers are not in entire abeyance at any time in disease, food, whether solid or liquid, given by the mouth or in enemata, requires to be at least partially pre-digested—converted into peptone.

As a dietetic or therapeutical agent, therefore, in cases of enfeebled digestive powers through inability of the gastric forces to perform their proper functions, or with the view of stimulating the latter into action, aside from the fact of nourishment being intended, this preparation has been of signal service to me.

Because of its being partially digested and thus its assimilation hastened, it is especially indicated in the irritable and the adynamic types of wasting diseases, and especially adapted for invalids, for debilitated people, and after serious surgical operations where the digestive forces are naturally very much weakened, being retained when other foods have been rejected.

In peritonitis, with constipation as a prominent symptom—and so constantly is this the case, due to either mechanical obstruction or the obstruction wrought by paralyzed peristalsis, the latter especially if opium in any form has to any extent been employed for the relief of pain—this preparation has most happily met my anticipations. Given in small portions at a time by the stomach, no tendency to obstruction or increase of the existing tympanites has been noticeable apparently, as is not unusually the case when ordinary cow's milk in any form is administered. This may be explained, perhaps, in great measure, by the carbonic-acid gas acting as a sedative to the alimentary canal and the freer digestion through the action of the lactic acid.

In the convalescent stage of the continued fevers, with consequent exhaustion, or in elderly persons, when food can not be taken in sufficient quantity, it has proved of the utmost value. This would lead me to recommend it in the summer diarrhœas connected with a lack of the digestive powers.

In the treatment following upon serious surgical operations, abdominal section in particular, where the indications for a light form of liquid nourishment are obvious, I have found it answer exceedingly well—far better than kumyss or peptonized milk. The quantity to be given in any particular case must vary with the condition of the patient.

In disorders accompanied with incessant attacks of vomiting, with the discomfort and distress incident thereto, and where all forms of nourishment and even stimulants are apparently rejected, so trying to the skill and patience of the physician, to suggest a line of treatment is not in the nature of this paper. I wish merely to call attention to two of the more prominent sources of vomiting in which dexia-kefir has proved of great service.

Especially has this been the case in the vomiting of pregnancy, so obstinate at times, for not only does it afford relief, but it is the means of the patient obtaining nourishment, if it is given in small quantities, an ounce or two at a time, and repeated at short intervals.

In vomiting as the result of ulcer of the stomach, the object being alike to give the stomach as much rest as possible and yet furnish the means of affording nutrition, it may be attained by administering it either by the stomach as above stated, or, if the vomiting is very urgent, by means of enemata in larger quantities.

Tarnier having but recently recommended as of great advantage a strict milk diet in the albuminuria existing during pregnancy, the advisability has occurred to me of giving this preparation of fermented milk in place of cow's milk, but no case has occurred in my practice to warrant me in giving it the trial.

Finally, it is obvious from these observations that, in the practical application of this preparation of fermented milk, one finds it to contain all the nutritive properties of ordinary cream milk, the alimentary functions being in part spared the time and labor of digestion and assimilation, in that the mechanical and chemical labor of digestion has been partially performed.

Borofuchsin as a Stain for Tubercle Bacilli.—Professor Lubimoff describes in the "Meditsinskoe Obozrênie" a new stain for tubercle bacilli, which he calls borofuchsin. It consists of—fuchsin, 0·5 gramme; boric acid, 0·5 gramme; absolute alcohol, 15 grammes; distilled water, 20 grammes. Prepared thus, it has a slightly acid reaction; it is quite clear and not liable to spoil by being kept, consequently it is always ready for use. The sputum is dried on a cover glass, and stained by being heated in contact with the borofuchsin for one or two minutes. The stain is then washed out by treatment with dilute sulphuric acid. The specimen is then washed with alcohol, and subsequently immersed for half a minute in a saturated alcoholic solution of methylene blue. After being washed in distilled water and dried, the examination of the specimen is made in oil of cedar or in a solution of Canada balsam. In exactly the same way sections of tuberculous organs may be stained after hardening in spirit, only in such cases the steps of the operation must be somewhat more prolonged. The main difference between this and other staining processes for Koch's bacilli is that, when borofuchsin is used, the process of washing it out with sulphuric acid is an almost instantaneous one. All other bacilli are, as when other stains are used, rendered colorless and invisible, the tubercle bacilli being alone seen.—*Lancet.*

Iodoform and Tubercle.—"Iodoform, though an excellent antiseptic and bactericide for some purposes, is," says the "Lancet," "according to Rovsing, of Copenhagen, useless as a destructive agent of tubercle bacilli. He has found that the growth of tubercle is in no way retarded by the presence of a very considerable quantity of iodoform. He has more than once inoculated the two eyes of a rabbit with pure and iodoformed tubercle respectively, and has invariably found that the morbid process was communicated to the eye containing the iodoformed tubercle some time before the other was affected, the irritation produced by the iodoform in the tissues appearing to cause them to form a more suitable soil for the development of tubercle than those of the other eye, which were not similarly exposed to irritation."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 30, 1888.

THE PHILADELPHIA DISCUSSION ON DIPHTHERIA AND LARYNGEAL INTUBATION.

Of late it has come to be somewhat common for medical societies of purely local membership to invite residents of other localities to read papers at their meetings or to speak upon particular aspects of a subject appointed for discussion. It has often been done in New York, and almost always it has met with the entire approval of the meeting—more than that, we think there has generally been a feeling of indebtedness to the visitors for their having consented to appear and perform the part assigned them. The recognition of excellence that is implied by an invitation to address a body of men of which one is not a member is undoubtedly pleasing even to persons of the greatest eminence, and, so far as the reading of a paper goes, it is probably a pleasant task under such circumstances. On the other hand, in the discussion which is to follow its reading, a stranger is apt to find himself somewhat at a disadvantage from the fact that he does not quite know how to interpret what is said by men whose personal characteristics he is necessarily almost wholly unacquainted with. On the whole, however, this is but a trifling drawback, perhaps not to be taken into account in estimating the general value of the plan.

One of the most successful of the occasions on which the course has been followed seems to have been that of the meeting of the Philadelphia County Medical Society, held on the 23d of May, at which Dr. Jacobi read a paper on "The Therapeutics of Diphtheria," and Dr. O'Dwyer spoke on the subject of "Intubation Tubes." Intimately connected as Dr. Jacobi's name is with the literature of diphtheria, it must be said, we think, that he has seldom if ever produced a more satisfactory contribution to our knowledge of that disease than is constituted by his Philadelphia paper. Having wisely cut loose at the outset from the trammels that would have been imposed upon him if he had attempted to cover too broad a field, he was enabled to bring out with great clearness the logical grounds on which he rested his practical conclusions. Consequently, the paper embodied, in our opinion, one of the most valuable expositions of the course to be pursued in the every-day management of the disease that are to be found in literature. Moreover, the remarks made by our Philadelphia brethren in the discussion seem to us to have been unusually apposite and instructive.

What Dr. O'Dwyer said was brief, and yet it amounted to an indisputable demonstration. It is not to be wondered at, therefore, that in the discussion some of the speakers strayed from the point, for, pithy as his exposition was, Dr. O'Dwyer had left nothing essential unsaid on the proper subject of his remarks. The whole proceedings were so exceptionally interesting to all general practitioners of medicine that we have not hesitated to devote to them an unusually large share of our space.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 26, 1888:

DISEASES.	Week ending June 19.		Week ending June 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	2	8	4
Scarlet fever	164	30	162	37
Cerebro-spinal meningitis	3	3	5	5
Measles	211	17	223	26
Diphtheria	141	41	139	42
Small-pox	3	4	6	0

Society Meetings for the Coming Week:

Monday, *July 2d:* Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association.

Tuesday, *July 3d:* Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Society of the County of Broome, N. Y. (quarterly); Union, N. J., County Medical Society (quarterly); Chittenden, Vt., County Medical Society; Androscoggin, Me., County Medical Association (Lewiston).

Thursday, *July 5th:* Society of Physicians of the Village of Canandaigua, N. Y.; Washington, Vt., County Medical Society.

Saturday, *July 7th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Miller's River, Mass., Medical Society.

OBITUARY NOTES.

John B. McIntyre, M. D., a graduate of the College of Physicians and Surgeons, of the class of 1877, died in New York on the 6th inst., in the forty-fourth year of his age, of peritonitis resulting from perforation of the vermiform appendix. The deceased was a native of New York, and studied medicine under Dr. Henry B. Sands. At the time of his death he had attained to a lucrative practice, and was much esteemed by the profession and by those who knew him for his ability and integrity.

Evander Willard Ranney, M. D., a graduate of the Berkshire Medical Institution, of the class of 1833, who had for many years been a practitioner in New York, died on Friday, the 22d inst., at the age of seventy-six years.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of June 5, 1888.

The President, Dr. George W. Jacoby, in the Chair.

Notes on the Principles of Craniometry.—Dr. Frederick Petersen read a paper thus entitled. After a review of craniometric nomenclature, the reader stated that, while individual convolutions exerted no specific influence upon the bones of the head, the shape of the skull was modified in correspondence with the gross divisions of the brain beneath it. The left temporal bone was said to be depressed in congenital aphasia. In infantile spastic hemiplegia there was flattening of the side of the skull opposite the paralyzed part. Cerebral localization had been concerned mainly with motor and sensory functions. Ideational localization had yet to be developed. In his own opinion, the temporo-sphenoidal lobes, and perhaps the occipital, contained cortical centers for depressing emotions. Musical ideas and auditory memories had their origin in the temporo-sphenoidal lobes. Benedikt had reduced craniometry to a science, showing that the skull was built upon crystallographic principles. The measurements taken should be sufficient to reconstruct the skull. Triangulation of the skull should be required in asylums in the case of every patient, and in prisons in the case of every criminal. We were behind European countries in this matter. Even in Italy, fourteen measurements were required for asylum records. The reader thought that eleven measurements at least should be made: 1. The circumference of the skull. 2. The naso-occipital arc. 3. The naso-bregmatic arc. 4. The bregmatic-lambdoid. 5. The binauricular. 6. The antero-posterior diameter, taken from the glabella to the maximal occipital point. 7. The greatest transverse diameter. 8. The binauricular diameter. 9. The two auricular-bregmatic radii. 10. The facial length. 11. The greatest height of the skull. Only a pair of calipers, a tape-measure, and a strip of lead two feet long were required. For more detailed measurements other instruments were necessary. Benedikt's calipers were recommended. The pathological and forensic importance of such measurements was shown by the fact that minimal and maximal dimensions were more common among the insane and criminal classes than among other people. The bregmatic-lambdoid arc was said to be shortened in epilepsy. The reader referred to a hundred cases of his own observed at the Hudson River State Hospital, at Poughkeepsie, in which asymmetry had been observed.

Progressive Muscular Atrophy with Anæsthesia.—Dr. J. A. Booth reported the case of a man, forty-two years of age, a shoemaker by trade, who was still under observation. There was no family history of nervous disorders, nor any history of alcoholism or syphilis in the case. The patient had been married eighteen years, and had had two children; one, a girl of five years, had never walked. The affection had commenced in October, 1878, with general weakness and weakness in the arms and hands. In January, 1879, the patient's voice had commenced to be husky. Six months later he complained of a feeling of cold and numbness in the left shoulder and side of the neck, with subsequent decrease in size. The atrophy, commencing in the deltoid, had spread to other muscles of the trunk and upper extremities. At the present time the patient weighed 155 pounds. There was marked sinking in of both shoulders, also weakness of the upper extremities, with marked atrophy of the interossei. There were scars and abrasions about the hands and a scar on the neck. The patient stated that he did not know when these injuries had been received, that he had not felt them. There was no ataxia of the gait or upon standing. The voice was harsh, and the left side of the palate was paretic, the uvula being drawn to the right. The larynx had been examined by Dr. A. H. Smith. The left superior constrictor, the left palato-pharyngeus, and the adductors of the left vocal band were paralyzed. There was slight deviation of the tongue to the right. There were marked fibrillary contractions in the atrophied muscles. The patellar reflexes were exaggerated. There was sluggishness of the accommodation, but no change in the visual field and no diplopia. Taste, smell, and hearing were not impaired. It was apparently a case of progressive muscular atrophy with bulbar symptoms. The reader called attention to the sensory impairment as an unusual complication, and suggested, to account for the anæsthesia and analgesia, a lesion in the peduncle or pons on the right side.

Dr. Starr remarked that the anomaly mentioned had been recorded by Ross and by Gowers in their text-books. In cases of this character post-mortem examinations had shown abnormal cavities in the cord, due chiefly to the degeneration of gliomatous tumors. Schultze had described cases, Bäumler also in her article upon syringomyelia. The case reported by Dr. Booth was, in the speaker's opinion, a case of this kind. The fact that the senses of touch, pain, and temperature were all abolished would support this view. The sense of touch sometimes escaped in syringomyelia, but not always. The three tracts were found in the formatio reticularis of the medulla and pons, and extended through at least one fourth of its extent. A lesion affecting them all would involve also the cranial nerves passing through this part. The symptoms reported could be more satisfactorily explained by a lesion in the cord and by considering the case as one of syringomyelia.

Degeneration of the Peripheral Nerves in Locomotor Ataxia.—Dr. J. C. Shaw reported the case of a man, forty-seven years old, who had typical locomotor ataxia. Following an attack of hæmaturia, he had had two epileptic seizures, and had died the following day. At the post-mortem examination the hæmorrhage was found to have come from the right kidney. Pieces of the sciatic, plantar, and popliteal nerves had been removed for examination, part of the specimens being stained with osmic acid and part with the bichromate-of-potassium solution. Changes were found which the reader considered distinct from the Wallerian degeneration. These changes consisted in granular degeneration, liquefaction, and even absorption of the myeline sheath, with persistence of the axis-cylinder and in some places a collapsed sheath of Schwann.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of May 23, 1888.

The President, Dr. J. Solis-Cohen, in the Chair.

The Therapeutics of Diphtheria.—By invitation, Dr. A. Jacobi, of New York, read a paper on this subject. After having expressed his gratification at having been invited to introduce the discussion, he proceeded as follows:

When I considered the subject which is to be the topic of your deliberations this evening, and remembered the vastness of its literature, it became clear to my mind that a digest, ever so small, of what had been written would fill more than many evenings, and still fall short of accomplishing the object in view. I was aware that I must not come here with literature. You will excuse me, therefore, for only detailing in plain language some of the facts gathered in my contact with diphtheria these thirty years and the therapeutical measures which I have learned to appreciate and to practice. Thus, I shall not touch upon the large number of panaceas which have ascended like rockets and never been seen again.

Diphtheria is a contagious disease. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases. There is probably no spontaneous origin of diphtheria any more than there is a spontaneous origin of cholera or scarlatina. What has been called follicular amygdalitis (or "tonsilitis") is diphtheria in many, perhaps most, instances.

It is seldom dangerous to the patient, because the tonsils have but very little lymph communication with the rest of the body. But the diphtheritic variety of follicular amygdalitis also is contagious. This mild variety is that from which adults are apt to suffer. It made me proclaim the warning that there was as much diphtheria out of doors as there was in doors; as much out of bed as in bed. With this variety the adult is in the street, in business, in the school-room, in the railroad car, in the kitchen and nursery. With this variety, parents, while complaining of a slightly sore throat, kiss their children. Wherever it is suspected it ought to be looked after. Where it is seen it ought to be isolated and treated, less perhaps for the sake of those who are sick than of those who are in serious danger of being infected. This is the more necessary as this form is apt to last long and give rise to repeated attacks. But it is not only the mild variety which is apt to last long. Serious, undoubted cases are also apt to last for weeks, and some of them months. As long as they persist they are contagious.

These reminiscences and quotations from former writings must justify the pre-eminent place I claim for preventive treatment. Those sick with diphtheria, severe or mild, must be isolated. If barely possible, the other children ought to be removed from the house. This can but rarely be done in the homes of the poor, in the densely populated districts. A great charity is still waiting for its consummation—viz., that of erecting buildings, dormitories, and play-rooms for those who ought to be temporarily exiled from their infected homes. A suggestion of mine, before the New York State Medical Society at its meeting of 1882, resulted in the erection of the Willard Parker Hospital, of New York, for the benefit of those suffering from scarlatina and diphtheria. The erection of a sufficient number of temporary homes would be a still greater blessing to the poor, and a greater protection to the public at large. If it is impossible to send the well children away, let them remain outside the house, in the air, as long as feasible, and with open bedroom-windows during the night, in the most distant part of the house; during the winter on a lower floor. Their throats must be examined every day, and their rectal temperatures taken by the mother, so that the physician may be called on the occurrence of but slight changes. The few minutes spent in this way are amply repaid by the safety they may accomplish. The attendants upon patients with diphtheria must have no intercourse with the well children; though a brief visit of the physician may not render him sick, or dangerous to others, a long exposure affects him or a nurse to a greater or less degree. The well children of a family in which there is diphtheria must not go to school or church. Schools must be closed when a number of pupils have been attacked; or, better still, when there is an epidemic, though it may not yet have affected the school-children to a great extent; the teachers ought to be taught how to examine throats, and directed to do so every morning, and send home those children who are suspected.

When an attack of diphtheria has made its appearance, it is well enough to examine the hygienic condition of the house with its deteriorating influences on the general health of the inmates, and to look after the source of the case in the persons of friends, attendants, and help. A family with children ought to insist upon the occasional inspection of the throats of their servants; those with chronic pharyngeal catarrh should not be hired. A seamstress or laundress coming for an occasional day's work, sick-nurses, children's nurses, and cooks ought to be examined from time to time, the more so the more such people are inclined to conceal slight troubles, for obvious reasons. The opportunities for infection are so numerous that it is impossible to sail absolutely free from it. It is easy to imagine how many cases of diphtheria are liable to be disseminated by teachers, shop-keepers, restaurants, barbers, and hair-dressers.

In times of an epidemic every public place, theatre, ball-room, dining-hall, and tavern ought to be treated like a hospital. Where there is a large conflux of people there are certainly many who carry the disease. Disinfection ought to be enforced at regular intervals. In this respect I can but repeat what I said in my treatise (p. 172) and Pepper's "System of Medicine" (i, p. 697). Public vehicles must be treated in the same manner after a suspicious person has been carried; that it should be so when one with small-pox has happened to be conveyed in them appears quite natural. Livery-stable keepers who would be anxious to destroy the germ of small-pox in their coaches must learn that diphtheria is as dangerous a passenger as variola; and what is correct in the case of a poor hack is more so in a railroad car, whether emigrant or Pullman. I have seen many patients coming to and leaving the city in them. They ought to be thoroughly disinfected in times of an epidemic at regular intervals, for the high-roads of travel have always been those of epidemic diseases. Still, can that be accomplished? Will not railroad companies resist a plan of regular disinfections because of their expensiveness? Will there not be an outcry against this despotic violation of the rights of the citizen, the independence of the money-bag? Certainly there will be, exactly as there was when municipal authority commenced to compel parents to keep their children from school when they had contagious diseases in their families, and when small-pox patients were arrested because of their endangering the passengers in a public vehicle, or taken to a fever hospital for the protection of their neighbors. In such cases it is not society or the State that tyrannizes over the individual; it is the individual that endangers society.

To what extent the infecting substance may cling to surroundings is best shown by the cases of diphtheria springing up in premises which had not seen diphtheria for a long time, but had not been interfered with; and best, perhaps, by a series of observations of self-infection. When a diphtheritic patient has been in a room for some time, the room, bedding, curtains, and carpets are infected. The child is getting better, has a new attack, may again improve, and is again stricken down. Thus I have seen them die; but also improve immediately after being removed from that room or house. If barely possible, a child with diphtheria ought to change its room and bed every few days.

To other rules of protection and disinfection, both private and public, including the prohibition of public funerals, I allude only for the purpose of referring to the admirable rules published in its "Bulletin" No. 10, of September 6, 1879, by the National Board of Health, and copied in my treatise on diphtheria, New York, 1880, and my article on diphtheria in Pepper's "System of Medicine," vol. i, p. 698.

Prevention can accomplish a great deal for the individual. Diphtheria will, as a rule, not attack a healthy integument, be this cutis or mucous membrane. The best preventive is, therefore, to keep the mucous membrane in a healthy condition. Catarrh of the mouth, pharynx, and nose must be treated in time. Many a chronic nasal catarrh, with big glands round the neck, requires but two or three regular salt-water injections (1 to 130) into the nose, and gargling if the children are large enough to do it. The addition of one per cent. of alum will often be found useful. This treatment, however, must be continued for many months, and may require years. Still there is no hardship in it, and no excuse for its omission. The nasal spray of a solution of nitrate of silver (1 to 500 or 1,000) will accelerate the cure, and not infrequently has a treatment which was considered obsolete when I was young been of great service to me. It consists in the internal administration of the tincture of *Pimpinella saxifraga.* It is certainly an efficient remedy in subacute and chronic pharyngitis and laryngitis. I generally give it to adults, diluted with equal parts of glycerin and water, a teaspoonful of the mixture every two or three hours, with the proviso that no water must be taken soon after.

Large tonsils must be resected in times when there is no diphtheria. During an epidemic every wound in the mouth is liable to become diphtheritic within a day, and such operations ought to be postponed if feasible. The scooping of the tonsils, for whatever cause, I have given up since I became better acquainted with the use, under cocaine, of the galvano-cautery. From one to four applications to each side, or to the post-nasal space, are usually sufficient for every case of enlarged tonsils or lacunar amygdalitis. It is advisable to cauterize but one side at a time, to avoid inconvenience in swallowing afterward, and to burn from the surface inward. Cauterization of the center of the tonsils may result in swelling, pain, and suppuration, unless the cautery is carried entirely to the surface; in other words, the eschar must be on, or extend to, the surface. Another precaution is to apply the burner cold and heat it *in situ.*

Nasal catarrh and proliferation of the mucous and submucous tissue may require the same treatment, but in my experience the cases which require it are less frequent than in those in which the tonsils need correction.

The presence of glandular swellings round the neck must not be tolerated. They and the oral and mucous membranes affect each other. Most of them could be avoided if every eczema of the head and face, every stomatitis and rhinitis resulting from uncleanliness, combustion, injury, or whatever cause, were relieved at once. A careful supervision of that kind would prevent many a case of diphtheria, glandular suppuration, deformity, or phthisis.

For its salutary effect on the mucous membrane of the mouth, chlorate of potassium or of sodium, which is still maintained by some to be a specific, or almost one, is counted by me among the preventive remedies. If it is anything more, it is in a case of diphtheria an adjuvant. It exhibits its best effects in the catarrhal and ulcerous condition of the oral cavity. In diphtheria it keeps the mucous membrane in a healthy condition or restores it to health. Thus it prevents the diphtheritic process from spreading.

Diphtheria is seldom observed on healthy, or apparently healthy, tissue. The false membrane is mostly surrounded by a sore, hyperæmic, œdematous mucous membrane. Indeed, this hyperæmia precedes the appearance of the diphtheritic exudation in almost every case. The exceptions to this rule consist of those cases in which the virus may take root in the interstices between the normal tonsilar epithelia, pointed out by Stoehr but a few years ago. Indeed, many cases of throat disease occurring during the prevalence of an epidemic of diphtheria are but those of pharyngitis which under favorable circumstances may develop into diphtheria. These throat diseases are so very frequent during the reign of an epidemic that in my first paper on diphtheria ("Am. Med. Times," Aug. 11 and 18, 1860) I based my reasoning on 200 cases of genuine diphtheria and 185 of pharyngitis without a visible membrane.

These cases of pharyngitis, and those of stomatitis and pharyngitis accompanying the presence of membranes, are benefited by the local and general effect of chlorate of potassium. The surrounding parts being healthy or returning to health, the membrane remains circumscribed. The generally benign character of purely tonsilar diphtheria, which is apt to run its full course in from four to six days, has in this manner contributed to secure to chlorate of potassium the reputation of being a ready remedy, *the remedy*, in diphtheria. The dose of the salt must not be larger than 15 grains (1 gramme) for an infant a year old, not over 20 or 30 (1·5–2) for a child from three to five years, in the twenty-four hours. An adult must not take more than 1½ drachm (6 grammes) daily. These amounts must not be given in a few large doses, but in repeated doses at short intervals. A solution of one part in sixty will allow a teaspoonful every hour, or half a teaspoonful every half-hour, in the case of a baby one or two years old.

It is not too late yet to raise a warning voice against the use of larger doses. Simple truths in practical medicine do more than simply bear repetition—they require it. For, though the cases of actual chlorate-of-potassium poisoning are no longer isolated, and ought to be generally known, fatal accidents will still occur even in the practice of physicians. When I experimented on myself with half-ounce doses thirty years ago the results were some gastric and intense renal irritation. The same were experienced by Fountain, of Davenport, Iowa, whose death from an ounce of the salt has been impressively described in Alfred Stillé's "Materia Medica," from which I have quoted it in my treatise on diphtheria. His death from chlorate of potassium induced me to prohibit large doses as early as 1860. In my contribution to Gerhardt's "Handbuch der Kinderkrankheiten," vol. ii, 1877, I could speak of a series of cases known to me personally. In a paper read before the Medical Society of the State of New York in 1879 ("Med. Record," March 15th) I treated of the subject monographically, and alluded to the dangers attending the promiscuous use of the drug, which has descended into the ranks of domestic remedies; and, finally, in my treatise (New York, 1880) I collected all my cases and the few then recorded by others. Since that time the recorded cases have become quite numerous, and but a few days ago a few new ones were related before the Practitioners' Society of New York. The facts are undoubted, though the explanations may differ. The probability is that death occurs from methæmoglobinuria produced by the presence of the poison in the blood, though Stockvis, of Amsterdam, has tried, by a long series of experiments, to fortify my original assumption that the fatal issue was due to acute nephritis.

The attempts at forming indications for the treatment of patients with diphtheria—I refuse to say treatment *of* diphtheria—based upon a preconceived or acquired idea as to the nature and causes of diphtheria, are all futile. We know that many cases are undoubtedly of local origin; but there are those in which we require no other proof of its original infectious character than the fact that there is a period of incubation. But all that is indifferent, in view of the fact that the cases we are called upon to treat are, as a rule, or have become, both local and constitutional. It is these we have mostly to deal with.

There is no better proof of the non-existence of a specific in diphtheria than the fact that the pharmacopœia has been exhausted to find one, and new remedies, legitimate and illegitimate, are being recommended all the time as panaceas. While there are certain indications resulting from the characteristics common to all, every case must be treated on general principles, which must be applied to the prominent individual features. When there is a high temperature in the beginning, it requires all the tact of a good physician to judge of the advisability of reducing it by antipyretics, such as sponging, warm bathing, cold bathing, antipyrine, acetanilide, or the subcutaneous use of the carbamide of quinine. Convulsions may demand active treatment, such as with chloroform inhalations or the use of chloral hydrate internally or by the rectum. Vomiting or other cerebral symptoms may call for liquids or smaller or larger doses of opiates. A very quick and feeble pulse may require a few doses of a heart stimulant—digitalis, strophanthus, or sparteine—in the very beginning.

Renal complications are frequent and occur at an early time. The majority of cases terminate favorably; in some a large amount of albumin will be eliminated in the course of a few days and disappear shortly. But whether your individual case will be of that nature you do not know, and in time of danger nothing must be taken for granted. Milk or farinaceous diet, plenty of water, or, better, Poland, Bethesda, Seltzer, Apollinaris, or Vichy, warm bathing, warm feet, a few good doses of calomel, a number of hourly or two-hourly small doses of opium, which are better than those of digitalis, and nitroglycerin, will often prove beneficial. If a diffuse nephritis, such as is more frequently met with in scarlatina, is the result, it impairs the prognosis and requires further treatment conducted on general principles.

To what extent local treatment, if it is possible to employ it, is effective, can best be seen on external diphtheritic surfaces, such as the cutis denuded by vesicatories, the inguinal regions sore with intertrigo, the vagina, circumcision wounds, or tracheal incisions. I have tried almost everything which has been recommended for these conditions, but am most pleased with the effect of iodol or iodoform powdered, or one part with eight or ten of vaseline. Powders of subnitrate of bismuth, boric acid, or salicylic acid with fifteen or twenty-five times its quantity of starch have not given me the same satisfaction.

The treatment of diphtheritic conjunctivitis also requires nothing but local treatment. It consists in the application of small ice-bags or iced cloths, which must be changed every few minutes, and the frequent instillation of a saturated solution of boric acid, with or without atropine.

The local treatment of the false membranes of the fauces is a subject of great importance. To look upon them as an excretion, which needs no interference, is incorrect. If it were possible to remove or destroy them, it would be a great comfort; but they can be reached only in certain places, and just in those in which they do least harm. False membranes on the tonsils are the least dangerous, for their lymph communication with the rest of the body is very scanty. Thus almost all forms of tonsilar diphtheria are among the most benign, at least so long as the process does not extend. Most cases of the kind run their mild course in from five to seven days, and it is just these which have given rise to the many proposals of tearing, scratching, cauterizing, swabbing, brushing, and burning. There are cases which do not show the harm done. The fact is that neither the galvano-cautery, nor carbolic acid, nor tannin and glycerin, nor perchloride or subsulphate of iron, can be applied with leisure and accuracy to the very membrane alone, except in the cases of very docile and very patient children. In almost every case the surrounding epithelium is scratched off or changed, and thus the diphtheritic deposit will spread. Besides, the membrane of the tonsil is changed surface tissue, as it always is wherever the epithelium is pavement, and not deposited upon the mucous membranes, from which it might easily be detached. Whatever is done must be accomplished without violence of any kind. If nasal injections are found advisable, they can be made to wash the posterior pharynx and the tonsils sufficiently, so as to render the special treatment directed to the throat absolutely useless. Besides, it is easier, and meets with less objection, and gives rise to less exhaustion than the forcible opening of the mouth. This is of very great importance, as I shall show in connection with the local treatment of the nasal cavity. Where it is possible to make local applications without difficulty, the membrane may be brushed with tincture of iodine several times daily, or a drop of rather concentrated carbolic acid. Of powders I know of only one the application of which is not contra-indicated, viz., calomel. Even this may irritate by its very form. Everything dry irritates and gives rise to cough or discomfort. Whatever has, besides, a bad taste or odor, such as sulphur, iodoform, or quinine, is to be abhorred.

For the purpose of dissolving membranes, papayotin, or papain, has been employed. It is soluble in twenty parts of water, and may be injected, sprayed, or brushed on. I have used it in greater concentration, in two or four parts of water and glycerin, in the nose, in the throat, and, through the tracheotomy-tube, in the trachea. One of the irrepressible drug manufacturers and advertisers pushes the merits of some modification of the drug, which he calls papoid. For the same purpose trypsin is preferred by others. The mode of its application appears to be the reverse of indifferent. But lately I have seen, in the practice of one of our best-known practitioners, papayotin applied in powder, which resulted in constant irritation of the throat while the patient otherwise was convalescent. The pharyngeal hyperæmia and slight exudation disappeared when mild alum washes were substituted.

Steam.—Its inhalation is useful in catarrh of the mucous membranes, and in many inflammatory and diphtheritic affections. On mucous membranes it will increase the secretion and liquefy it, and thus aid in the throwing off of the false membranes. Its action is the more pronounced the greater the number of muciparous follicles under or alongside a cylindrical or fimbriated epithelium. Thus it is that tracheo-bronchial diphtheria, so-called fibrinous bronchitis, is greatly mitigated by it. Children affected with it I have kept in small bathrooms for days, turning on the hot water, and obliging the patient constantly to breathe the hot clouds. Several such patients I have seen recover with that treatment. Atomized *cold* water will never yield the same result. Nor have I seen the patent inhalers do much good.

Still, where the surface epithelium is pavement rather than cylindrical, and but few muciparous follicles are present, and the false membrane is rather immerged in and firmly coherent with the surface—for instance, on the tonsils and the vocal bands—the steam treatment is less appropriate. On the contrary, moist heat is apt in such cases to favor the extension of the process by softening the previously healthy mucous membrane. Thus it takes all the tact of the practitioner to select the proper cases for the administration of steam, not to speak of the judgment which is required to determine to what extent the expulsion of air from the steam-moistened room or tent is permissible.

Steam can be properly mixed with medicinal vapors. In the patient's room water is kept boiling constantly, over the fireplace, provided the steam is prevented from escaping directly into the chimney, on a stove (the modern self-feeders are insufficient for that purpose and abominations for every reason), over an alcohol lamp if we can not do better, not on gas if avoidable, because of the large amount of oxygen which it consumes. Every hour a tablespoonful of oleum terebinthinæ, and perhaps also a teaspoonful of carbolic acid, is poured on the water and evaporated. The air of the room is filled with steam and vapors, and the contact with the sore surfaces and the respiratory tract is obtained with absolute certainty.

The secretion of the mucous membranes is sometimes quite abundant under the influence of steam, but still, like that of the external integuments, increased by the introduction of water into the circulation. Therefore, drinking of large quantities of water, or water mixed with an alcoholic stimulant, must be encouraged. Over a thoroughly moistened mucous membrane the false membrane is more easily made to float and macerate.

It was for this purpose that pilocarpine or jaborandi was highly recommended. Guttmann recommended it as a panacea in all forms of diphtheria. There is no doubt that the secretion of the mucous membrane is vastly increased by its internal application, and by repeated subcutaneous injections of the hydrochloride or nitrate of the alkaloid, but the heart is enfeebled by its use. I have seen but few cases in which I could continue the treatment for a sufficient time. In many I have had to stop it because after some days of persistent administration I feared for the safety of the patients. Thus, as early as at the meeting of the American Medical Association at Richmond, eight years ago, I pointed out the exaggerations in the statements of Guttmann. There will be but exceptional cases in which pilocarpine will be tolerated long enough to do good. It is one of the remedies by which we may cure the disease and will kill our patient.

Diphtheria of the nose is apt to terminate fatally unless energetic treatment is commenced at once. This consists in persevering disinfection of the mucous surface. The disinfecting procedure must not be omitted long, because of the general sepsis resulting from rapid absorption from the surface, which is supplied with lymph-ducts and small superficial blood-vessels to an unusual extent. Disinfectant injections must be continued every hour for one or more days. If they are well made, the consecutive adenitis, particularly that about the angles of the lower jaw, is soon relieved and the general condition improved. But there are cases in which not the lymph bodies are the main gates through which constitutional poisoning takes place, but the blood-vessels only. In the incipient stage of such cases the discharge from the nostrils is more or less sanguineous; in them the blood-vessels, thin and fragile, carry the poison inward with great rapidity.

In a few cases injections are unsuccessful. They are those in which the whole nasal cavity is filled with membranous deposits to such an extent as to require forcible treatment. Sometimes it is difficult to push a silver probe through it. That procedure may be repeated, the probe dipped in carbolic acid, or wrapped in absorbent cotton moistened with carbolic acid of 50 or 90 per cent. After a while injections alone will suffice. But now and then the development of false membranes is very rapid; a few hours suffice to block the nostrils again, and the difficulty is the same.

The liquids which are to be injected must be warm and fairly mild. Solutions of chloride of sodium, two thirds of one per cent., saturated solutions of boric acid, one part of bichloride of mercury, 35 of chloride of sodium, and 5,000 of water, more or less, or lime-water, or solutions of papayotin, will be found satisfactory. From the selection of these remedies it is at once apparent that the object in view is partly that of washing out and partly that of disinfecting. I have not mentioned carbolic acid, which may be used in solutions of one per cent. or less. Its employment requires care, for much of the injected fluid is swallowed, and proves a danger to children of any age, but mostly to the young.

Most of the syringes I find in my rounds are abominations. The nozzle must be large, blunt, and soft. After having recommended for many years the common hard-rubber ear syringe, the sharp end of which was cut off, I now use always a short, stout glass syringe with soft-rubber mounting in front. When the children can not or must not be raised, I employ the same solutions from a spoon or a plain Davidson atomizer. These applications can thus be made while the children are lying down, every hour or very much oftener, without any or much annoyance. The nozzle must be large so as to fit the nostril. A single spray on each side will generally suffice. I am in the habit of covering the common nozzle with a short piece of India-rubber tubing. For a day or two these injections of fluids or spray must be made hourly. It is not cruel to wake the children out of their septic drowsiness; it is certain death not to do it.

Injections of the nose are oftener ordered than judiciously made. Hundreds of times have I been assured that they had been made regularly, hourly, for days in succession. Still there was a steady increase of glandular swelling and sepsis. I never believe a nurse to have made them regularly unless I have seen her doing it. They *will* run up their syringe vertically and not horizontally, the fluid *will* return through the same nostril. On the successful injecting or spraying of the nares hangs every life in cases of nasal diphtheria. I have long learned to look upon a neglect to tell at every visit how to make an injection as a dereliction of duty. This may appear a trifling way, but it is a safe one. The nurse must be made to tell you that at every injection the fluid returns through the other nostril, or through the mouth, or is swallowed.

The procedure is simple enough, and need not take more than half a minute for both nostrils. A towel is thrown over the child's chest up to the chin, and the child gently raised in bed by the person who is to make the injection. This person, sitting on the bed, steadies the patient's head against her chest while somebody else holds the patient's hands. The syringe is introduced horizontally by the person sitting behind the patient, and gently emptied. No time must be lost in refilling and attending to the other side. When pain is complained of in the ears, more gentleness is required, or the spray, or pouring in from a spoon or minim-dropper even, has to take the place of the injection.

Many sins are committed in even doing this simple thing. The unfortunate little one is made to see all the preparations and is worried and excited, and the necessary gentleness in the proceedings is neglected. The cases reported by me in a discussion on the local treatment of diphtheria, before the Section in Theory and Practice of the New York Academy of Medicine, read as follows: *

> "There were two trained nurses, and two children of six and four years. When I saw the little four-year-old the other was dead. Where did he die? His head between the knees of the trained nurse. They had been told Dr. Jacobi ordered nasal injections to be made every hour in such cases. Every hour the unfortunate boy was lugged out of bed, protesting and fighting, and wearing out his little strength in his battle against two trained brutes; had his head rammed between the knees of one of them, who was herself comfortably seated on a chair while the other did the rest; and thus the boy was murdered. When I heard that fearful story from the smiling lips of that person I begged and pleaded, and showed her how to do it gently. A week afterward the doctor told me that the little girl died between the knees of one of the smiling creatures, and neither of them is in the State prison."

Which is the concentration in which antiseptic injections should be used? For twenty-five years and more, while employing irrigations and injections frequently, I had used quite weak solutions and felt assured of their efficacy. All at once (when the gospel of the bacteria was being preached) it was maintained that weak solutions were useless and a snare, because antiseptics, and particularly carbolic acid, would not destroy bacteria and bacteria poisons except in such doses and concentrations as would necessarily destroy blood and tissues first. I felt dismayed, but still continued in my heretical ways, hoping that improved knowledge would finally harmonize theory and practice. So it happened. In the "American Journal of the Medical Sciences" for January, 1881, T. Mitchell Prudden proved that a solution of one sixteenth of one per cent. of carbolic acid prevented the emigration of white blood-corpuscles under circumstances otherwise favorable to inflammation, and Koch found that, though bacteria were not easily killed, their growth was stopped by a solution of one part of carbolic acid in 850, and their activity by one in 1,200. These effects are all that is required for practical purposes; thus the frequency of applications is justified by both necessity and safety.

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* N. Y. "Medical Record," 1887, p. 403.

Diphtheritic adenitis, the swelling of the cervical glands near the angles of the lower jaw, to which I have alluded as an ominous symptom, points to nasal and naso-pharyngeal infection. The treatment consists in disinfection of the absorbing surfaces.

Direct local treatment of the glands, if not entirely useless, is, at all events, of minor importance and efficiency. Applications of one part of carbolic acid to ten of alcohol irritate both surface and patient more than they can do good. Inunctions may do some good by friction (massage); inunctions with some absorbable material in them may do a little better. The common iodide-of-potassium ointment is useless; iodide of potassium in three or five parts of glycerin is more readily absorbed; the same in equal parts of water, with a little animal fat, and six or eight times its quantity of lanolin, gives an ointment which is readily absorbed. Iodine is found in the urine within a few hours. Iodoform may be utilized in the same way. Injections of iodoform in ether, which I suggested some time ago, are too painful. Mercurial inunctions, those of blue ointment, require too much time for any effect to take place. Oleates are too irritating locally; a lanolin ointment would prove more satisfactory. After all, however, the readiest method of reducing the swelling of the glands, and improving the prognosis accordingly, is that of cleansing and disinfecting the field of absorption. The rare cases of suppuration in these glands require incision and disinfection. They are as ominous as rare, however. There is but little pus, as a rule, but one or many local deposits of disintegrated gland cells and gangrenous connective tissue. The incisions must be extensive, and the scoop and concentrated carbolic acid must be freely used. In these cases hæmorrhages may occur, some of them very difficult to manage. I have seen some of them terminate fatally. In these carbolic acid must be avoided. Compression, actual cautery, and acupressure have rendered good service. Solutions of iron must be avoided, for the eschar formed is a shield behind which deleterious absorption is going on constantly in such wounds, as it does in the uterus.

Besides sepsis, the great dangers in diphtheria are heart failure and strangulation. The latter has its own indication, to which I shall not allude to-day. Heart failure exhibits itself sometimes quite suddenly, but as a rule it is foreshadowed by a gradually increasing frequency and weakness of the heart-beats and pulse, and the equal length of the intervals between the feeble systole and diastole and diastole and systole. This equality is always a dangerous symptom. Heart failure is due, besides the influences common to every disease and every fever, to myocardial changes. These may depend on the influence of the septic decomposition of the blood, and the ill nutrition of the heart-muscle depending thereon, or the direct diphtheritic changes of the tissue, or both. These changes and dangers set in sometimes at a very early period. Thus whatever enfeebles must be avoided. Patients must be spared every unnecessary activity. They must remain in bed, without excitement of any kind, and take their meals and evacuate their bowels in a recumbent or semi-recumbent posture; crying and worrying must be avoided, and the room kept airy and rather dark, so as to encourage sleep if the patient is restless. In no disease, except, perhaps, in pneumonia, have I seen more fatal results from sudden changes of posture or from exertion. Unless absolute rest is enforced, neither physician nor nurse has done his or her duty.

The threatening feebleness of the heart yields a positive therapeutical indication. In no disease is the danger greater from the side of the heart, in no disease is the indication for sustaining and strengthening the heart more positive from the very beginning. The use of digitalis, strophanthus, sparteine, besides camphor, alcohol, and musk, must not be postponed until feebleness and collapse have set in. It is possible or probable that they will appear; and it is certain that a cardiac stimulant will do no harm. It is safe and advisable to use one at an early date—that is particularly necessary when antipyrine or acetanilide is given. A few grains of digitalis, in a palatable and digestible form, may, or must, be given daily. When a speedy effect is required, one or two doses of from two to four grains are not too large, and must be followed by smaller ones. When it is justly feared that the effect of digitalis may be too slow, I give, with or without the former, sulphate of sparteine. An infant a year old will take one tenth of a grain four times a day, as a matter of precaution, and every hour or every two hours in an emergency.

Of at least the same importance as cardiac tonics are alcoholic stimulants. The advice to wait for positive symptoms of heart failure and collapse before the life-saving apparatus is employed is bad. There are cases which end in recovery without treatment, but we do not know beforehand which they will be. In no alleged mild case is the patient safe until he has recovered. When heart failure sets in—and often it will occur in apparently mild cases—our efforts are too often in vain. Thus alcoholic stimulants ought to be given early, and in large quantities, though amply diluted. There is no such thing as intoxication or danger from it in septic diseases. A few ounces daily may suffice, but I have seen ten ounces daily of brandy or whisky save children who had done badly with three and four.

Coffee is a good stimulant for the heart. Camphor may be employed to great advantage for the same purpose. From five to twenty-five grains may be given daily, as camphor-water or in a mucilaginous emulsion, which is easily taken. It does not upset the stomach as ammonium carbonate is apt to do. It may be employed subcutaneously when a rapid effect is aimed at, in five parts of oil, which is milder and more convenient than ether.

But the best internal stimulant, in urgent cases, is Siberian musk, in powders or with mucilage. When required at all it ought to be given in sufficient doses and at short intervals. When ten or fifteen grains, administered to a child one or two years old, will not accomplish, within three or four hours, a return of a more satisfactory heart's action, the prognosis is very bad.

Besides exhaustion at the height of the disease, we have paralysis during convalescence, or intense anæmia long after apparent recovery. This anæmia may be general or it is local, and then mostly cerebral.

Diphtheritic paralysis, though of different anatomical and histological origin, yields in all cases a certain number of identical therapeutical indications. These are: The sustaining of the strength of the heart by digitalis and other cardiac tonics. A child of three years may take daily, for a month, three grains or its equivalent; for instance, one grain of the extract. This is an indication on which I can not dwell too much. Many of the acute and most of the chronic diseases of all ages do very much better by adding to other medications a regular dose of a cardiac tonic. It is true that it is a good practice to follow the golden rule to prescribe simply and, if possible, a single remedy only, but a better one to prescribe efficiently. A prescription-paper with a single line on it looks well, but a readily convalescent or well man looks better.

Besides, there are some more indications: Mild preparations of iron, provided the digestive organs are not interfered with. Strychnine or other preparations of nux at all events. In ordinary cases a child of three years will take an eightieth of a grain three or four times a day. Local friction, massage of the throat, of the extremities, and trunk, dry, or with hot water, or oil, or water and alcohol, and the use of both the interrupted and continuous currents, according to the known rules and the locality of the suffering parts, find their ready indications. The paralysis of the respiratory muscles is quite dangerous; the apnœa resulting from it may prove fatal in a short time. In such cases the electrical current used for very short periods, but very frequently, and hypodermatic injections of sulphate of strychnine in more than text-book doses, and frequently repeated, will render good service. I remember a case in which these and the occasional use of an interrupted current, and occasional artificial respiration by Silvester's method, persevered in for the better part of three days, proved effective.

Chloride of Iron.—I am still, as I was in my first paper on diphtheria in 1860, an advocate of the internal use of chloride of iron. Its mode of administration I have not changed much these twenty years. In a public lecture delivered before a New York audience by a European authority, whose name has lately appeared a little more prominently in the newspapers than an American physician would wish, I was highly praised for giving a few drops of tincture of chloride of iron a few times a day. This eulogy I have always tried not to deserve, for the efficient method of its administration is not that. The chloride of iron is an astringent and antiseptic. Its contact with the diseased surface is as important as its general effect; therefore it must be given frequently, in hourly or half-hourly doses, even every twenty or fifteen minutes. An infant of a year may take three or four grammes a day, a child of three or five years eight or twelve. It must be mixed with water to such an extent that the dose is half a teaspoonful or a teaspoonful; a drachm in four ounces allows half a teaspoonful every twenty minutes. No water must be drank after the medicine. As a rule it is well tolerated. There are some, however, who will not bear it well. Vomiting or diarrhœa is a contra-indication to persevering in its use, for nothing must be allowed to occur which reduces strength and vigor. A good adjuvant is glycerin; better than syrups. From ten to fifteen per cent. of the mixture may consist of it. Now and then, but rarely, it is not well tolerated, either. When diarrhœa sets in, glycerin must be discontinued. Still these cases are rare; indeed, the stomach bears glycerin very much better than the rectum. In the latter, the presence of a small dose of glycerin is known sometimes to produce large evacuations, a result appropriated and utilized by an advertising nostrum-monger.

In connection with this remedy, I wish to make a remark of decidedly practical importance. I know quite well that recovery does not always prove the efficacy of the remedy or remedies administered. But I have seen so many bad cases end in recovery with chloride of iron, when treated after the method detailed above, that I can not rescind former expressions of my belief in its value. Still, I have often been so situated that I had to give it up in peculiar cases. These are cases in which the main symptoms are those of intense sepsis; I should say cases in which the iron and other rational treatment were not powerful enough to prevent the rapid progress of the disease. Children with naso-pharyngeal diphtheria, large glandular swellings, feeble heart and frequent pulse, thorough sepsis, and irritable stomach besides—those in which large doses only of stimulants, general and cardiac, can possibly promise any relief—are better off without the iron. When the circumstances are such as to leave the choice between iron and alcohol, it is best to omit the iron and rely on stimulants mostly. The quantities required are so great that the absorbent powers of the stomach are no longer sufficient for both. Nor is iron sufficient or safe in those cases which are pre-eminently laryngeal. To rely on iron in membranous croup means waste and danger.

Mercury.—The first volume of "A System of Practical Medicine by American Authors," which appeared in 1885, contains in an article on diphtheria, written in 1884, the following remarks, on page 705:

> "Not all cases of diphtheria are septic or gangrenous, nor are all the cases occurring during an epidemic of the same type. Some have the well-pronounced character of a local disease, either on the tonsils or in the larynx. The cases of sporadic croup, met with in the intervals between epidemics, present few constitutional symptoms, and assume more the nature of an active inflammatory disease, very much like the sporadic cases of fibrinous tracheo-bronchitis. These are the cases in which mercury deserves to have friends, apologists, and even eulogists. Calomel, 0·5–0·75 gramme (grs. viij–xij), divided into thirty or forty doses, one of which is taken every half-hour, is apt to produce a constitutional effect very soon. Such, with minute doses of one milligramme (gr. $\frac{1}{60}$) or more of tartar emetic, or ten or twenty times that amount of oxysulphuret of antimony, have served me well in acute fibrinous tracheo-bronchitis. But the mucous membrane of the trachea and bronchi is more liable to submit to such liquefying and macerating treatment than the vocal cords. The latter have no muciparous glands like the former, in which they are very copious. And while the tracheal pseudo-membrane, though recent, is apt to be expelled through a tracheal incision at once, that of the vocal cords takes from six days to sixteen or more for complete removal. Still, a certain effect may even here be accomplished, for maceration does not depend only on the local secretion of the muciparous glands, but on the total secretion of the whole surface, which is in constant contact with the whole respiratory tract. Thus, either on theoretical principles or on the ground of actual experience, men of learning and judgment have used mercury, in such cases as I detailed above, with a certain confidence. If ever mercury is expected to do any good in cases of suffocation by membrane, it must be made to act promptly. This is what the blue ointment does not. In its place I recommend the oleate, ten or twelve minims of which may be rubbed into the skin along the inside of the forearms or thighs, or anywhere else when those surfaces become irritated, every hour or two hours. Or repeated doses will be useful, such as mentioned before, or hypodermic injections of corrosive sublimate, in one-half or one-per-cent. solution in distilled water, four or five drops from four to six times a day or more, either by itself or in combination with the extensive use of the oleate, or with calomel internally. Lately the cyanide of mercury has been recommended very strongly. I hardly believe that it will work more satisfactorily than any other equally soluble preparation. Within the past few years the internal administration of bichloride of mercury has been resorted to more frequently and with greater success than ever before. My own recent experience with it has been encouraging, and so has that of some of my friends. William Pepper gave one thirty-second of a grain of corrosive sublimate every two hours in a bad form of diphtheritic croup, with a favorable result. But in this very bad case, desperate though it was—child of five years, respiration 70, pulse 160—large membrane, 'evidently from the larynx,' had been expelled before the treatment was commenced on the seventh day of the disease. The solution ought to be given in solution of 1 to 5,000 and in good doses. A baby a year old may take a half-grain every day many days in succession with very little, if any, intestinal disorder, and with no stomatitis. A solution of the corrosive sublimate in water is frequently employed of late as a disinfectant. It acts as such in a dilution of 1 in 20,000. As healthy mucous membrane bears quite well a proportion of 1 to 2,000 or 3,000, any strength between these extremes may be utilized. A grain of the sublimate in a pint or more of water, with a drachm of table salt, will be found both mild and efficient. As a gargle and nasal injection it will be found equally good. But it has appeared to me that frequent applications give rise to a copious mucous discharge; hourly injections into a diphtheritic vagina become quite obnoxious by such

over-secretion, which ceases at once when the injections are discontinued. Thus, when it is desirable not only to disinfect, but also to heal the diseased surface, the injections with corrosive sublimate appear to yield a result inferior to less irritating applications."

These remarks of 1884 constitute what I consider a great progress over the statements of my treatise on diphtheria, 1880, which are more cautious and negative. Extensive experience with the remedy increased my favorable opinion of its efficiency to such an extent as to induce me to publish a number of cases and conclusions in the "Medical Record" of May 24, 1884. They have been amply justified by the observations of the last four years, so that I am fully prepared to commit myself to the following statements: My conviction of the utter uselessness of internal medication in laryngeal diphtheria, membranous croup, is strongly shaken. The mortality of 90 or 95 per cent. of the patients not operated upon has no longer existed these five or six years, in my observation. The above-mentioned figures were by no means taken from small numbers, for since 1860 I have tracheotomized more than 500, perhaps 600, times, have assisted in as many more operations, and seen at least a thousand patients with membranous croup who were not operated upon at all. During the last six years I have seen no fewer than 200 cases, perhaps many more. Among them recoveries have not been rare. In the practice of no less a man than O'Dwyer I have seen two cases of general and laryngeal diphtheria in the same family which ended in recovery without any operative procedure. Such recoveries have taken place in patients of all ages, from four months upward. The uniform internal medication consisted in the administration of the bichloride of mercury. The smallest daily dose was a quarter of a grain (15 milligrammes). Half a grain daily, continued through five or six, sometimes eight, ten, or even twelve days, has not been rare among children of from three to six years. The doses varied from one sixtieth to one fortieth of a grain, and sometimes more. They are given every hour. They require the dilution in a tablespoonful of water, or other compatible fluid—for instance, milk—in order to be quite innocuous. They are not apt to produce gastric or intestinal irritation. When the latter occurred it was generally found that by some mistake the solution was as strong as 1 to 2,000 or 1 to 3,000. In the few cases in which it did exist, or was believed to result from the remedy, a few minims of camphorated tincture of opium administered with every dose, for a short period, proved sufficient to check it. The beneficial effect of the remedy depends greatly on the time of its administration. As a rule, such complete stenosis as necessitates surgical interference develops after days only. This necessity is often obviated by the remedy when given as detailed. When an operation is required after all, the treatment must be continued. I have never since 1863 seen so many cases of tracheotomy end in recovery as between 1882 and 1886, when the bichloride was constantly used as mentioned. Nor am I alone with these observations. I can name a dozen New York physicians, some of whom have often performed tracheotomy, who can confirm these statements from their own observations. Nor does the opinion of those differ who constantly perform intubation. I know that O'Dwyer, Dillon Brown, and Huber have come to the same conclusions, the latter having been a successful tracheotomist before he earned his laurels with intubation.

My experience in regard to the efficacy of the bichloride of mercury is mainly gathered in cases of laryngeal diphtheria and a limited number of fibrinous bronchitis. It is there where it has been particularly effective. Still, I must not say that they were localized affections. These, with us, are but very scarce. Our cases of diphtheritic laryngitis are mostly decreasing, and complicated with either diphtheritic pharyngitis, or rhinitis, or both. Not a few, mainly of the latter kind, exhibit constitutional symptoms, sepsis. But cases of that kind also I have seen end in recovery. One of the most interesting was that of a girl of seven years whom I saw a single time in consultation with Dr. J. Anderson. There was nasal and pharyngeal diphtheria, with cervical adenitis and some laryngeal stenosis. I recommended an hourly dose of one fortieth of a grain of bichloride, which she took for ten days, also nasal injections of the same, one grain to a pint. They were made hourly for many days, and altogether continued for more than a fortnight, for the patient lived so long and is still alive. She swallowed almost all the nasal injections, and great was my surprise when after some weeks I received the report of the case and learned that about twenty grains of the bichloride had found their way into the stomach of the little girl. She lived, and had but little stomatitis and hardly any intestinal irritation. If the case does not prove anything else, it proves this: that even desperate cases will end in recovery. This patient got well with the bichloride of mercury, and the case resembles all the other cases in this: that, after the rational and careful administration of solutions of hydrogyrum bichloride, local mercurial symptoms about gums, mouth, pharynx, and intestines are extraordinarily rare in infancy and childhood.

Intubation Tubes.—By invitation, Dr. Joseph O'Dwyer, of New York, read the following paper:

[Before reading his paper Dr. O'Dwyer exhibited tubes with a metallic attachment to replace the epiglottis in swallowing, one of them being so arranged with a spring that the finger might be introduced behind it as an extractor. In order to illustrate through how small a space breathing could occur, he exhibited a specimen from a case in which there had been no choking of voice or other sign of laryngeal involvement. Many feared, he said, that the tube would slip through into the trachea. A tube was exhibited *in situ* in a three-year-old larynx, showing that this accident could not occur if the proper size of tube for the age was employed.]

The testimony of tracheotomists from the time of Bretonneau has been uniformly in favor of cannulas of large caliber. I have failed to find a single dissenting opinion on this question, yet very few have given any reason in support of their conviction, or entered into any arguments whatever on the subject, probably because they considered that none was necessary, as it appears so very reasonable that the artificial channel should approximate as nearly as possible to the normal lumen of the air-passages.

I will refer to a few of the authorities on this subject before giving the reasons that led to the adoption of laryngeal tubes of so much smaller caliber than those generally used in the trachea. If a large opening is preferable in one situation it certainly is in the other, the same arguments applying to both. Bretonneau, for some reason which I have not been able to find, came to the conclusion that the cannulas which he first devised were not large enough, and laid down the rule that the artificial conduit should always have at least the normal diameter of the glottis of the subject. Trousseau indorsed this as an excellent precept, which should never be forgotten. Steiner says that as large a cannula as possible should be used. The first point of importance insisted on by West as influencing the result of tracheotomy in croup is the use of a large cannula. The author of the article on croup in Holmes's "System of Surgery" says that, as a general rule, both openings in the cannula should be sufficiently large to admit as much air as would pass through the rima glottidis in health. The following is from Reynolds's "System of Medicine": "No tube of less than a quarter of an inch in diameter is sufficient to carry on respiration. At a year old such a tube can not be introduced into the trachea; it would not be tolerated at two years old, so that at these ages some other means must be looked for to secure a passage for the air." This author then discusses the question as to whether the want of success with tracheotomy in very young children is not due to the inability to secure a large enough opening.

In answer to such assertions as the foregoing, it is only necessary to state that the diameter of the lumen of the trachea at a year old is scarcely a quarter of an inch, and, furthermore, an adult can breathe comfortably while at rest through an opening of this size. I have at present a man under my care who has been wearing a cannula in the trachea for the last seven months, the bore of the inner tube being exactly one fourth of an inch in diameter. During part of this time he was obliged to breathe exclusively through the artificial opening, but then the least exertion, such as walking across the room, was sufficient to induce dyspnœa. Nature supplied this patient, who is of large stature, with a breathing-tube at least seven eighths of an inch in diameter, and the surgeon substituted one having a breathing capacity of something less than one twelfth of this. In other words, the area of a cylinder seven eighths of an inch in diameter is a little more than twelve times that of one a quarter of an inch in diameter. Had the surgeon who operated in this case placed himself on record, he must have taken extreme grounds in favor of small cannulas.

Trousseau advocated larger cannulas than were first used, on the ground that in some cases the improvement that at first succeeded the operation of tracheotomy soon gave place to a return of the dyspnœa, and attributed this result to the inadequate size of the cannula employed, which did not provide for the permanent admission of a sufficient quantity of air. In illustration of this fact he says: "Place a quill in the mouth, and, closing the nostrils, endeavor to breathe entirely through it; at first you breathe easily enough, but soon your respiration becomes laborious, and at length you are fain to throw away the quill, and with open mouth once more to fill the lungs completely." I have tried this experiment with the quill, the diameter of which was three sixteenths of an inch, and could breathe through it for over five minutes without much discomfort, yet it represents in round numbers only the twenty-second part of the area or capacity of my trachea, estimating the diameter of the latter at seven eighths of an inch. If we now construct a cannula in the same ratio for a child of five years, the diameter of whose trachea is one third of an inch, it gives a caliber of three thirty-fourths of an inch in diameter, an opening about as large as the head of an ordinary-sized pin. Trousseau's illustration, therefore, fails to sustain his argument in favor of larger tubes, as it is certain that cannulas as small as this were never used. A more reasonable explanation of the return of the dyspnœa before the lapse of sufficient time for the extension of the disease would be the entrance of blood or the accumulation of secretions, because it occurred in only some cases, while, if due to the inadequate size of the cannula, it should have occurred in all.

In my early experiments with intubation the tubes had about the same caliber as those generally used for the trachea, but, in order to avoid injury to the vocal bands, which I feared more than anything else, it was necessary to give them the oval or elliptical, instead of the cylindrical, form. A few of these early forms I here show you. There was ample room, both in the glottis and in the trachea, for tubes of this size and shape, but I was not then aware of the hour-glass constriction that exists just below the vocal bands until it was demonstrated by the presence of ulceration through the whole thickness of the mucous membrane, corresponding to the long diameter, in every case in which the tube was retained for any considerable time. This defect could be remedied in only one of two ways—viz., either by diminishing the long diameter at the expense of the lumen of the tube, or by giving it the cylindrical form. The latter, by increasing the pressure on the vocal bands, would endanger their integrity, and I therefore adopted the former, and, as a result, the caliber of the tubes as at present constructed is probably less than half the original dimensions. The small caliber, consequently, was a matter of necessity, and not of choice, and, if the larynx would tolerate no larger without injury, any further argument, so far as intubation is concerned, would be useless. But, from the fact that I have failed to find any ulceration at the points above indicated from the tubes as now made, I am satisfied that the cutting-down process was carried further than necessary, and, if it is demonstrated that a larger opening would give better results, this could be obtained without danger to the vocal bands by an increase of the transverse as well as the antero-posterior diameter. The bore of the smallest tube while still in the cylindrical form, which is intended for infants of one year and under, is exactly one eighth of an inch in diameter. When we consider the size of the trachea at the same age, the disparity is not very great, and still less when compared with the subglottic division of the larynx, which is the narrowest portion of the breathing-tube. This part of the larynx, being completely surrounded by cartilage, is not subject to any variations in the normal condition, while the chink of the glottis may be greater or less, according to the position of the vocal bands.

I have found that in the adult the diameter of the lower division of the larynx is from one eighth to three sixteenths of an inch less than that of the trachea, which reduces the breathing capacity about one third. I have not made any similar measurements in children, but by comparing a section from the cricoid cartilage placed beside one from the trachea it does not appear that the area of the former is more than one half that of the latter; in other words, the disparity is greater in children than in adults.

In the preceding calculations I estimated on the size of the trachea, simply because it was more convenient, but it is evident that, in order to arrive at correct conclusions, we must compare the lumen of the cannula with that of the infraglottic division of the larynx, because the trachea would conduct air to and from the lungs just as well were it no larger than its mouth. But, as I have already stated, it was not from any such comparisons with the normal caliber of the larynx that the tubes have reached their present dimensions, but from noting the results of pressure on the intensely inflamed and infiltrated tissues as found post mortem. After an experience with tubes of various sizes in over two hundred cases of croup, besides other forms of stenosis in children, I am fully convinced that, as at present constructed, they afford ample room for carrying on the respiratory function in the most perfect manner.

When the disease is confined to the larynx and upper portion of the trachea, it is not an uncommon experience, after the paroxysm of coughing that immediately succeeds intubation has subsided, to find the little patient breathing so quietly and imperceptibly that it is sometimes difficult to convince the mother, who has returned to the room after an absence of fifteen or twenty minutes, that her child is still living. Such complete freedom of respiration would be impossible were the opening too small.

When the struggle for breath has continued long enough to produce extreme exhaustion, together with more or less atelectasis and congestion of the lungs, this perfect relief does not occur. The same is true after the partial asphyxia induced by prolonged or repeated attempts to insert the tube. In such cases the patients sometimes never rally, although air enter the lungs in the freest possible manner. If any dyspnœa whatever remains for any considerable time after intubation, or if the respiration is much above the normal in frequency, it indicates the presence of some complication or extension of the disease below the tube. The fact that several times, on removing a tube from the larynx, I have found its caliber considerably reduced by firmly adherent secretions when there had been no dyspnœa to indicate it, is good evidence that there is more room than is actually required for the free entrance and exit of air.

Physiology teaches us that the muscular system is the great consumer of oxygen, and that when this system is at rest the consumption of oxygen is reduced to a minimum. It has been estimated that as much oxygen is consumed during one hour of active exercise as would suffice for four hours in a state of repose with food, and for six hours without food. On purely physiological grounds, therefore, if only one fourth or one sixth of the amount of air is required in a state of rest, a cannula bearing this proportion to the normal lumen of the air-passages should afford ample room for the perfect performance of the respiratory function without the least effort whatever.

There would be no point in trying to determine through just how small a fraction of the normal lumen of the air-passages it was possible to carry on respiration effectually if the only object to be accomplished by the artificial channel were to allow the free passage of air to and from the lungs. There would then be no room for argument, as there could be no objection to having the cannula many times larger than necessary for this purpose, for such exists in the normal condition. I will add further that, were there no abnormal secretions to be got rid of, there would still be no reason for difference of opinion on this question.

The only ground left for argument, therefore, is the manner in which the machinery concerned in the removal of secretions is modified or injured by a cannula in the larynx or trachea. The mechanism of coughing, as I understand it, is simply getting as much air into the lungs as possible, condensing it, and allowing it to escape suddenly, on the same principle as the air-gun. To accomplish this, the glottis is firmly closed, coincidently with spasmodic contraction of the expiratory muscles, until the imprisoned air is sufficiently compressed, not only to give it power to project any offending substance before it like the ball from an air-gun, but also to increase the friction between it and the lining membrane of the air-passages to such a degree as to scrape off, so to speak, secretions that may be adherent. Considerable condensation, with great velocity of the expired air, is, therefore, necessary to give the maximum expulsive power. The latter without the former would accomplish nothing, because the same volume of air can be driven through the open or half-open glottis just as rapidly as in the act of coughing without the least power to remove a particle of mucus even from the larynx, much less from the bronchial tubes. This can be demonstrated by trying to cough while retaining the vocal bands in the expiratory position—the lack of power resulting solely from inability to compress the air to any appreciable extent. Coughing through a cannula is identical with this act when performed with a partially open glottis, and the only means left of subjecting the air to any condensation whatever is the much shorter time occupied in expelling it through the same space by which it more slowly entered.

An excellent and forcible illustration of this argument, and one the mechanism of which is identical with that of coughing, is the familiar act of blowing the nose. There is little or no ability to remove secretions from this organ without first reducing the nostrils to a small fraction of their normal caliber, or by momentarily producing complete occlusion, as in closing the glottis, until the air is sufficiently condensed to force the secretions out with it. Very little power can be developed even by closing one nostril and forcing all the air through the other, if normally patulous. If secretions can be removed more effectually from the air-passages through a cannula of the dimensions advocated by the authorities already quoted, for the same reason it should be easier to remove accumulations from the nose without compressing the nostrils. I maintain, therefore, that, while the artificial opening must be large enough for the perfect performance of the respiratory function, the power to expectorate is still further diminished, and in exact proportion to its increase beyond this limit.

Dr. William Pepper said that the evening had been so well occupied in listening to the two important and unusual papers —to him most instructive—that there remained little to say in the way of discussion, save as courteous appreciation of the kindness of the visitors and of the debt to them demanded. He rose, then, simply to express appreciation of the great wisdom of the advice to which the meeting had listened. In regard to the last paper, he wished to add his mite of evidence to the value of the operation introduced by Dr. O'Dwyer. It was destined to fill an important place for these reasons, if for no others: that one could induce parents to assent to intubation when it was impossible to secure their assent to tracheotomy; that in very young children, in whom, as was known, tracheotomy was so difficult an operation, intubation could be performed with great facility; and, finally, in septic cases, here was an operation for the restoration of the breathing-space by means of an artificial air-tube, which did not involve an abrasion of the surface to tempt extension of the infectious process.

From the masterly address of Dr. Jacobi, he was sure that every person present had derived much instruction and much pleasure—stamped as it had been, from beginning to end, with the accents of earnest truth, with the richness of practical experience. It was precisely these details to which Dr. Jacobi had called attention that were of the highest importance in the issue of cases. If he had done nothing more than give warning of the danger of relying too implicitly upon trained nurses, he would have done a service. As with every new instrument of precision, after its value had been demonstrated came a period in which there was a dangerous tendency to rely upon it too exclusively; so with trained nurses, if one trusted too implicitly to their unsupervised discretion, he was consigning his patient to more vigorous and, therefore, more dangerous ministrations —because equally unskilled—than the untrained solicitude of parents and friends. And this must continue to be the case until a longer and more thorough course of study was insisted upon. So, too, with the high importance of a radical treatment of antecedent and neglected—because apparently trifling—lesions, which the lecturer had emphasized. It was well to bear in mind the warning that tonsilar hypertrophies, nasal catarrhs, and the like might tempt the localization of diphtheria and, he might add, of scarlatina and of measles in time of epidemic. The extreme value of iodoform in the local treatment he could confirm. Soluble in ether, miscible with glycerin and with oils, capable of use as a powder, it was the best of all local applications, and might be applied in all cases and conditions. He would, however, interpose a mild protest against the too sweeping condemnation of the steam atomizer. Used with that gentleness so wisely insisted upon, and the confidence of the child obtained, the relief to oppression was so soon recognized that one could secure intelligent co-operation in its frequent and regular use. The problem of internal treatment was the most difficult one—a problem which largely and continually occupied our thoughts. He had been glad to hear Dr. Jacobi's clear and outspoken adherence to the mercurial treatment, although he had limited it to a certain group of cases. The speaker's longer experience had but abundantly confirmed his early impressions of its value—pre-eminently in laryngeal diphtheria, whether primary or descending—and he was constantly impressed with the tolerance of children to the bichloride, and equally to the mild chloride. But he would go further than the lecturer. If in a form conspicuous as a dangerous one, which was usually not primary but associated with rhinitis and faucitis, this treatment proved efficacious, why was it not equally good where the nasal or faucial disease had not extended into the larynx? He had found cases of nasal diphtheria which were a source of great anxiety yield in a most remarkable way, and it had seemed to prevent the local spread as well as septic infection. He agreed with Dr. Jacobi that it was well to begin treatment with the chloride of iron, the association of chloride of potassium being a matter of comparative indifference, and that large doses should be given at short intervals. But he had not been so fortunate in seeing it usually well borne by the stomach. When gastric or intestinal irritation manifested itself, it was well to stop the use of iron abruptly, and to substitute that of mercurials. Or when, in the beginning of a case, the glandular involvement, the faucial tumefaction, the constitutional symptoms, gave evidence of rapid sepsis, we could not depend upon iron, and must give the corrosive or the mild mercurial chloride at once. In an address covering so wide a field there was much room for difference of individual experience. In threatened heart failure he would appeal for the early administration of strychnine, which he placed above digitalis or sparteine or ammonia, above everything but alcohol. These were but slight observations on a subject opened with a breadth and discussed with a richness for which sufficient admiration could not be expressed.

Dr. Carl Seiler said that in his experience the addition of chlorate of potassium to the chloride of iron had been of great use, although he agreed with Dr. Jacobi that chlorate of potassium alone was of little use. From laboratory experiments he attributed this to the disengagement of chlorine gas when the two solutions were mixed. In the same way, at the suggestion of Dr. L. Wolff, he had found Labarraque's solution an efficient disinfectant in the proportion of 1 to 5. He used this as a spray to the nasal cavities or fauces, and had had excellent results. He might also say that we should have the carbolic-acid solution not only saline but alkaline, and therefore, instead of chloride of sodium, he added borate and bicarbonate. The soothing effect of an alkaline solution was well known, and he thought it freed the surface better from secretions. The solution should be of such a strength that neither exosmosis nor endosmosis would take place. He saw that Dr. O'Dwyer had added an artificial epiglottis to the tube. It had been the experience of all laryngologists to meet with cases of complete or almost complete destruction of the epiglottis by syphilitic or other ulceration, in which there had been no difficulty of deglutition at all. Therefore he had long ago come to the conclusion that it was not the epiglottis which protected the larynx, but the apposition of the ventricular bands. And he would suggest that he had had no experience with such a device; that, if the tubes were so made that the head could slip into the ventricles of Morgagni without interfering with the ventricular bands, there would be no difficulty in deglutition experienced. It was not only in New York, but also in Philadelphia, that the only operation for opening up the air-passages that parents would consent to was intubation. He recalled a very distressing case in an asylum, in which the matron would not consent to tracheotomy until the mother of the child had been communicated with, and while they were hunting for the mother the child choked to death. This was before we knew of intubation. That we might have performed at once.

Dr. H. R. Wharton said that, the hour being so late, he must postpone what he had intended to say concerning some of the complications of intubation. As to the caliber of the tubes, the fact that children did breathe well with such tubes as were now made was sufficient evidence of the correctness of Dr. O'Dwyer's position. Since his experience of this he had not been so anxious as formerly to get in the largest trachetomy-tubes.

Dr. E. E. Montgomery said that since August, 1886, he had performed some thirty or forty intubations, having previously done some twenty-eight tracheotomies. Fifty per cent. of the children intubated had recovered. His experience was that this operation largely reduced the necessity for tracheotomy, and he believed that, if intubation were done early in every case, tracheotomy would rarely be necessary. He felt that, in devising and perfecting his operation, Dr. O'Dwyer had been a benefactor to the medical profession and to the human race.

Dr. M. Price said that, in the evolution of steam from lime, he had for the last fifteen years depended upon the same method as country people used in the scalding of hogs—to put a few pieces of lime into a bucket with hot water, place a blanket over the bed, and let steam pass over the child's head. Soon the child acquired confidence and asked for relief, and would even bend his head down over the bucket trying to get the vapor into his throat. Now, if every half-hour a hot stone or brick or piece of metal was added to the water, it would keep up the heat without any stove or fire being needed in the room. It kept the room clean and the atmosphere sweet, and he had not found so much danger of contagion when lime was used. He showed a specimen of tincture of chloride of iron in syrup, which is well made and of the proper color. There were very few drug-stores where one could get it properly made, and, if the right thing was not obtained, it was of no use whatever. Its greatest good was in its local effect.

Dr. Shimwell had performed intubation sixteen times, with seven recoveries. In all, there had been immediate relief to respiration. In one case he had had to remove the tube twice, and introduce it three times, and perform artificial respiration. In removing the tube post mortem, he had found it impossible to drag it down through the trachea, so there was no danger of its slipping. Was not the occurrence of substernal respiration-depression rather too late an indication to wait for?

Dr. Ewin Rosenthal said that, in the mercurial treatment of diphtheria, he had resorted in two cases recently to the sublimation of mercurous chloride from platinum foil. One patient had died and one had recovered. In the fatal case the patient had been almost *in extremis* when the treatment was instituted.

The President had listened with pleasure and with profit to both these papers, and, with all the study that he had given to this subject, he had gained information to-night on many points. The advice to give early attention to the heart, that when danger already threatened it might be too late to effect anything with remedies, was advice that we should all take to heart. We had been distinctly taught that the prevention of this complication must be from the beginning an integral part of the treatment. In regard to local treatment, his experience had differed from that of Dr. Jacobi. Where it could be properly applied to the extreme margins of the false membrane, he had found the topical use of chloride of iron, by firm and gentle pressure with a brush or, preferably, a cotton wad, the most serviceable agent he had used. The drug had an astringent and a disinfectant action, and he was satisfied that he had time and again seen it assist the detachment of false membrane, and apparently prevent the extension of the infection. Concerning the value of chloride of iron internally, the importance of large and frequent doses, and the advantage of mixture with glycerin to assist its local effect, he could only confirm what had been said. So, too, as to the bichloride of mercury; he had been glad to hear its great usefulness emphasized, and, with Dr. Pepper, he would include all forms of the disease in the field of that usefulness. Empirical observation had long taught the pre-eminent value of the chlorine compounds in general in the treatment of diphtheria; and the mercury chlorides (more particularly calomel, however) had always enjoyed a high reputation in the internal treatment of membranous laryngitis. It had pleased him, in these discussions, to hear reasons at least plausibly advanced in explanation of facts which our forefathers had learned and used empirically; that was the true direction of medical progress. The topical action of steam was very important. It had always seemed to him that in the natural course of the disease the membrane was thrown off by an accumulation of fluid beneath it, which softened it and secured its detachment. We aimed, then, by furnishing artificial moisture, to imitate the natural process of recovery. And this led him to speak of the value of the vapors from lime in the process of slaking. Using a large wash-tub or wash-boiler, and keeping up a supply of large pieces of lime, we secured an abundant disengagement of the hot vapor of water, carrying up with it particles of lime, which mechanically assisted by prying up the edges of the false membrane, and thus favoring the access of the vapor of water beneath it.

There was another method of local treatment which he had employed with great satisfaction, more especially in former years, when he saw more of the disease—that was, inhalation of carbolic acid in the spray of a steam atomizer in very large doses. Twenty to twenty-five grains should be added to the ounce of water, and from half an ounce to an ounce sprayed into the throat every hour, or even half-hour, until commencing discoloration of the urine gave evidence of saturation, when the use of the remedy was to be stopped until the urine again became clear. Under this method he would advise the attending physician to see the child four or five times a day, always having the urine last voided saved for him, and, when the olive discoloration was noticed, to intermit the use of the carbolic acid. This seemed to him to disinfect the system and thereby improve the local condition, and, at the same time, to prevent or diminish the danger of systemic sepsis. He had not been aware before to-night that such small doses of carbolic acid as Dr. Jacobi had mentioned could be of service.

He must express sincere appreciation of Dr. Jacobi's masterly paper. He was also glad to thank Dr. O'Dwyer for his lucid exposition, founded on fact and proved by actual exhibition of specimens, that the small caliber of his intubation-tube was amply sufficient for due respiration. The speaker's own experience with tracheotomy had led him to favor large tubes—the largest that could be introduced without touching the walls of the trachea. He still believed that he had seen life saved by taking out small tubes and substituting larger ones. And he confessed that the small caliber of the tube used was one of the theoretical considerations which he had enumerated among the drawbacks to intubation. But facts were stronger than theories, and, as the small-caliber intubation-tube did seem to give air enough, and as enough was all that was wanted, he was ready to profess his satisfaction with its present caliber. He must ask Dr. O'Dwyer to make clear the question as to the impaction of membrane. This was not a mere theoretical objection, but was borne out by experience. Perhaps he had been led to attach an undue importance to the matter by an accident which had occurred to him a year or so before Dr. O'Dwyer read his now historical paper before the International Medical Congress at London in 1881. He had been called to a case of membranous laryngitis, and had proposed tracheotomy, which had been declined. As he turned to leave the room the mother called piteously, "Oh, Doctor, don't leave my child without trying to do something for it." He said to his assistant: "We will try to save this child," and, taking a catheter, he cut off the end and passed the instrument into the larynx. The child instantly became black in the face, and there was nothing for it but, without asking any questions, to plunge his knife into the trachea as the child lay on its mother's lap. He inserted the same catheter through the orifice deep into the trachea, and then was performed artificial respiration, the assistant inflating the child's lungs through the tube with his own breath, and the speaker's hands exercising compression of the thorax in respiratory rhythm, and after a while they had the satisfaction of leaving the rescued child sleeping peacefully with unobstructed respiration. But he confessed that this experience had cost him some of the most anxious moments of his life, and had left a fear of the danger of crowding down membrane in front of a tube introduced into the larynx which might, perhaps, make him over-anxious.

Dr. Jacobi said that the slaking of lime had the further advantage that it was the only way to utilize lime. A lime-water spray was useless, but in slaking a large amount was carried up into the air and air-passages. The suggestion of the president that carbolic acid should be used in spray until discoloration of the urine was noticed he did not feel inclined to adopt. Diphtheria was the very disease in which no complication should be allowed to exist, and we must not tempt them. A single case in which we should have to blame ourselves for a possible nephritis would, in his judgment, condemn the treatment. Besides, young infants were sometimes poisoned by very small quantities.

Dr. O'Dwyer said that pushing down of membrane did occur, though rarely. The difference between the liability to the accident in catheterization and in intubation was that the catheter had an open, comparatively broad end, while the intubation-tubes were comparatively probe-pointed. One pushed and caught the membrane, the other slid past it. He had crowded membrane down sufficiently to produce asphyxia in only two cases out of two hundred. In those two, on removal of the tube, the cast was coughed out. If we took away the tube because the child was breathing badly and the trachea was full of membrane, the child not having the strength to cough it out, the child choked from the absence of the tube, not from its previous presence. His attention was now being directed to devising a means of getting rid of the membrane. He hoped to present something practicable before long. Blocking with membrane while the tube was in might occur. Formerly, when the swell of the tube was not so great, it would be coughed out, but now it was not coughed out and suffocation might take place. The original tube was better in this regard. The earlier tubes had been made to fit into the ventricles with the idea of permitting the approximation of the ventricular bands, but the device did not work. It was true that the epiglottis was merely an accessory, but in an intubation case, the ventricular bands being held open, we had to depend upon it; and that was the reason, the dependence being a poor one, that solids and semi-solids, which could go down in mass, were better than liquids.

NEW YORK SURGICAL SOCIETY.

Meeting of May 23, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

The Gradual Correction of False Ankylosis at the Knee. —Dr. V. P. Gibney presented two patients illustrating the method of correcting false ankylosis by means of jointed splints, such as are used in Billroth's clinic in Vienna. They had been used with great success; in old cases of deformity, in which the limb had been straightened under ether and in which relapse had occurred, the patients had invariably done well. In treating the knee joint, a stocking was first applied, with padding over the patella; then the limb was covered with a plaster-of-Paris bandage, extending from the lower third of the leg to the upper fourth of the thigh, the ligamentum patellæ being left uncovered. The splint was next adjusted and covered with a plaster bandage. While the plaster was setting, a transverse cut was made across the popliteal space down to the stocking, and an elliptical space was also made over the ligamentum patellæ. On the following day the leg was extended as much as possible, and a wedge of cork was inserted between the edges of the opening in the popliteal region. If there was much pain, the manipulation was not repeated until the third day after, when the limb was extended more and a larger wedge was inserted. In the course of a few weeks, with a single dressing, from 15° to 50° of motion could be gained. In the cases of children the limb could be straightened in two or three weeks; in older patients a longer period was required. In reply to a question by the president, Dr. Gibney said that he had not applied this method in cases of subluxation.

Dr. R. J. Hall thought that it was difficult to avoid recurrence of the deformity. He had succeeded in straightening the limb by applying an anterior splint, even in cases of subluxation, but the deformity had recurred, even after the splint had been worn for a year. It seemed to him that it was better to resect the bones and nail them together.

Dr. Gibney said that after the limb was straightened he was accustomed to use a Thomas splint, gradually leaving off the plaster and securing the joint by parallel bars. In the cases of children the usual infiltration about the knee disappeared to a great extent, so that a Thomas splint could be applied, which kept the limb straight. He recalled the case of a patient, an adult, who had come to him after having been treated by Thomas, and had worn a splint for four or five years. The cicatrix stamped the case as genuine. He had a range of motion of 35° or 40°; at the end of a year it was twice as great. When seen last June he had not worn the splint for five or six months, and flexion was nearly perfect.

Subastragaloid Amputation.—The President presented a patient on whom he had done a subastragaloid amputation because of frost-bite of the toes. The stump was noticeable because of the thickness of the sole-pad and the preservation of active movements of the ankle joint. The operation, he thought, was to be preferred to Syme's whenever it was practicable, because of the greater length of the limb and the fact that the face of the stump was composed of those tissues of the sole which normally received the weight of the body in walking, and not of the back of the heel, as after Syme's amputation. The advantage over Chopart's amputation was that this did not need so long a flap from the sole, and that in Chopart's the tendency to elevation of the heel was apt to interfere with the usefulness of the stump.

Œsophagotomy for the Removal of a Tooth-brush.—The President presented a bone-handled tooth-brush, six inches and three quarters long, which he had removed by œsophagotomy. The patient was a spare man, forty-eight years old, who had been under restraint for a few weeks because of mental depression, and who in a moment of suicidal aberration had swallowed the tooth-brush, bristle-end first. The swallowing had been done so quietly and had caused so little inconvenience that the attendant had not been aware of it until informed by the patient two hours later. The reporter saw him ten hours later, and could touch the upper end of the brush with a sound at a point about seven inches beyond the incisor teeth, say one inch below the cricoid cartilage. The patient had entirely recovered from the suicidal impulse, was anxious to be relieved, and bore the explorations with much fortitude and calmness. Palpation of the neck gave a little pain, but the presence of the brush could not be thus detected. After a few cautious, unsuccessful attempts to catch the handle with œsophageal forceps, ether was given and œsophagotomy done upon the left side, the œsophagus being reached below the thyreoid gland. A longitudinal incision large enough to admit the finger was made in the œsophagus, and through it the handle of the brush could be felt lying with its breadth in the mesial plane; it was easily caught with an artery forceps and drawn out. The only vessels that required to be tied were two that had been divided in incising the skin. The opening in the œsophagus was closed with a short, continuous catgut suture and a single additional stitch at the upper end, where it was noticed that air escaped in coughing. These sutures included the mucous and muscular coats; a second row of interrupted sutures was placed in the fibrous outer sheath, with the hope of thereby permanently shutting off the deep ones from the rest of the wound. The external wound was closed with catgut and silkworm-gut sutures about a large split drainage-tube, which reached to the immediate neighborhood of the incision in the œsophagus. The patient was fed with milk in small quantities at a time, about three pints daily, with an occasional milk-punch. He complained only of a sore throat for a few days, and at no time did he have any fever. The dressing was changed on the fourth day; there was a slight discharge, decidedly offensive in odor, and the wound was gently syringed with a bichloride solution. On the sixth day the discharge was still scanty and almost free from odor. On the night of the seventh day, during a fit of coughing, the patient felt air pass out through the wound, and on the following day the dressing became quite wet with the milk which he swallowed. He was then fed twice a day through an œsophageal tube, but was allowed to drink a little water when he wished it. Occasionally he would feel the milk regurgitate from the stomach and escape in very small quantities through the wound. This happened for the last time on the eleventh day, and air escaped for the last time on the morning of the twelfth day. On that day he drank a glass of water in the speaker's presence without feeling it in the wound, and, as cool water syringed into the wound could not be felt in the œsophagus, it was thought that the opening was sufficiently closed to justify shortening of the drainage-tube. On the fourteenth day it was again shortened, and on the sixteenth day it was entirely removed. On the day of the meeting, the seventeenth day, there remained only a shallow opening in the skin.

Septic Peritonitis following Perforation of the Vermiform Appendix.—Dr. C. McBurney reported the case of a young physician, aged twenty-six, who had been taken ill on the Friday previous. He had complained of slight pain in the right iliac fossa, but had slept well that night, and had had no particular symptoms on the following day, excepting general malaise and slight pain. He had slept Saturday night, but had had renewed pain on Sunday morning, and looked much more ill than his general symptoms indicated. He lay in bed reading during the morning, his temperature not rising above 100·5° F. By noon he had become very sick, the pain in the right iliac fossa having somewhat increased, while the abdomen had become distended. The reporter saw him for the first time on Sunday evening, when he was also seen by Dr. W. H. Draper, Dr. H. B. Sands, and Dr. D. M. Stimson. At that time the patient's expression was bad, the eyes were somewhat sunken, and the face was very pale; temperature 101° F.; the abdomen moderately distended, no distinct tumor in the right iliac fossa, but marked tenderness on pressure in that region and slight resistance to pressure at a point about two inches to the inside of the iliac spine. An operation was at once decided upon, and this was done by the speaker at 9 P. M. A vertical incision about four inches long was made over the caput coli. This incision lay two inches inside of the anterior iliac spine. The peritoneal cavity was then opened, when about two ounces of pus escaped. The appendix lay to the outer side of the colon and pointed upward. The appendix (specimen shown) was gangrenous, and a small perforation existed. After the pus sac had been washed out, Douglas's pouch was examined and found to contain a large quantity of pus, which had doubtless been derived from the original sac formed about the appendix. A median opening was then made to facilitate complete cleansing of the peritonæum. The intestines were noted to be markedly inflamed, but not adherent. The appendix was removed and the wounds were closed, with drainage supplied by tubes. The patient rallied well from the operation, but died about twenty-four hours later from septic peritonitis, which had doubtless begun many hours before the operation. Two old concretions with well-marked facets were found in the appendix. A point of interest was the fact that the concretions were very much larger than the opening into the colon, showing that their growth must have been gradual. The speaker thought that in the larger proportion of these cases the process was entirely intraperitoneal. He had that day operated in a case in which perforation had been imminent, but had not yet taken place. The appendix, which was very tense and full of thick pus, was separated from its adhesions and removed uninjured, so that no sepsis could occur. Rupture into the peritoneal cavity would no doubt have occurred within a very few hours. If the operation in the first case had been performed earlier, septic infection would have been avoided, but the trouble was very insidious in its development, the pain being so slight as not to arouse suspicion of its serious import.

[Note (nine days later).—In the second case reported by Dr. McBurney the patient has made an uninterrupted recovery. No untoward symptom of any kind has occurred, and the wound is now almost entirely healed.]

Dr. A. G. Gerster said that the extension of pus into Douglas's pouch was not rare, and it should always be looked for. Moreover, it was always advisable to examine *per rectum* all patients with pain in the right iliac fossa, since in this way a clew to the true condition might be obtained. He had not long ago had two cases of perforative peritonitis at the German Hospital. In one there had been several purulent foci, in the shape of saccated abscesses, one in the sacral fossa being felt through the rectum and subsequently incised. A post-mortem examination had shown perforation of the appendix. In the second case the patient had developed symptoms of perityphlitis, and a fluctuating swelling had been felt and incised through the rectum, the patient making a good recovery. The patients had both been boys, between fourteen and sixteen years of age. The cases reported by Dr. McBurney, especially the second one, were very instructive, since they threw new light upon the subject of such abscesses. Dr. McBurney had recently performed laparotomy for suppurative peritonitis supposed to be due to perforation, and had removed the distended appendix just before rupture. Had the operation been delayed until after rupture of the sac, the absence of a tumor, together with the resulting general peritonitis, would have rendered the operation difficult and recovery very doubtful. The practical deduction from this case was to operate early, and not to search for pus with the exploring needle when there might be none; the use of the needle might be fatal to the patient, as puncture of the distended sac might permit the escape of intensely septic matter into the peritoneal cavity; on the other hand, free exposure would permit ocular examination and a safe removal of the sac and its contents. Undoubtedly the chances would be the best if the operation was done before the formation of pus—that was, at a time when the process was still limited to the vermiform appendix. Such facts as Dr. McBurney's operation had revealed would probably tend to give our operative endeavors an entirely new direction. It was certainly very desirable to have the darkness and uncertainty still enveloping this subject cleared up by new observations.

Dr. R. Abbe cited the case of a boy upon whom he had operated the previous week. The patient had had nausea for a few days, with tenderness in the right iliac fossa. When he entered the hospital there was a tumor in the right iliac region, extending over to the median line; above the pubes there was an enlargement which felt like the distended bladder. A hypodermic needle was introduced, but no pus was withdrawn. There was marked tympanites, and the temperature was 101° F. Median laparotomy was performed. The omentum and intestines were found matted together; on separating the adhesions, a quantity of fœtid pus escaped. The finger entered a cavity within the pelvis, extending over to the right side between the sacrum and the rectum. The original incision was extended, the peritoneal cavity was washed out, and a tampon of iodoform gauze was introduced into it. The boy made a good recovery, his temperature rising but little above normal. The case was interesting as showing how pus frequently gravitated into the pelvis. The abscess might have been drained through the rectum, but the speaker had found that a fistulous opening often remained.

Dr. F. Lange said that he had opened such an abscess through the rectum five times, four patients recovering. There was no difficulty in draining the cavity in this way, and contamination was avoided, as the pus was evacuated through the tube without coming in contact with the gut. In every instance the perityphlitic abscess had been felt through the rectum. The speaker had made it his rule to examine through the rectum in cases of perityphlitis, and had found that in a good percentage of cases the inflammatory product could be felt in Douglas's space.

In reply to a question by Dr. McBurney, Dr. Lange said that in nearly all the cases cited by him the abscess had developed in the course of what was supposed to be acute perityphlitis. It was, of course, important to make a distinction between the two varieties. In his cases of perityphlitis in which recovery had taken place there had been no diffuse peritonitis, the pus being separated from the general cavity by adhesions. When diffuse peritonitis existed, he would not attempt to drain through the rectum.

Dr. Gerster recalled the case of a young lady who had had four attacks of perityphlitis within three years, the first being very acute and attended with the classical symptoms. There had been no appreciable abscess, but the tumor which had been present had increased in size after each attack. Her general health had declined, she had become anæmic, and suffered from profuse night-sweats. The speaker had advised operation, which he had subsequently performed. On dividing the abdominal walls, a dense mass of connective tissue had been found occupying the right iliac fossa, which was punctured with a large needle, but no pus was withdrawn. On freely incising the mass, a central cavity, of the size of an English walnut, was opened, lined with unhealthy granulating tissue, and containing inspissated pus. The external walls of this cavity were so thick that it could only have perforated into the general peritoneal sac. The patient had made a good recovery.

Dr. Lange said that he had observed a similar case. A boy had had repeated attacks of perityphlitis. On opening the abdomen, a small abscess cavity was found containing broken-down material. It was scraped out and there had been no recurrence of the peritonitis. Such cases might end in spontaneous recovery.

Dr. J. A. Wyeth thought that the general impression was that these processes were originally intraperitoneal. Exploratory laparotomy was justifiable even in cases of doubt, since it was attended with slight danger.

Dr. Conrad cited the case of a patient who had had repeated attacks of perityphlitis, one of which had terminated with a discharge of pus through the rectum. Finally a tumor had developed in the iliac region. On opening the abdomen, a pus cavity was found, after a long search, containing only about a drachm of pus. The patient had recovered and had had no further trouble.

In reply to a question by Dr. McBurney, the speaker said that the peritoneal cavity was opened, the incision being made in the iliac region.

Gastro-enterostomy for Carcinomatous Stricture of the Pylorus.—Dr. Lange showed a specimen and read the following report of the case: Mrs. E. F., aged fifty-two, was admitted into the German Hospital on January 21, 1888. She had suffered for two months with indigestion, vomiting, and pain in the stomach. For ten days before her admission the pain had been quite severe. She presented a decidedly cachectic appearance, and was very anæmic and emaciated. Her stomach was much dilated and was dislocated downward to such a degree that the greater curvature was at a point considerably below the navel. The contents of the organ were so viscid and undigested that it was impossible to empty it in the ordinary manner by means of a tube. As in a former case, it was necessary to introduce a thick rubber tube, raising the patient's pelvis so that the head would hang down almost perpendicularly and the fluid would run out by its own weight. Nearly half a pailful of thick material escaped. A large tumor could then be felt in the pyloric region; it was hard and nodular, and was undoubtedly of a carcinomatous character. Gastro-enterostomy was performed on the 14th of February, as a palliative measure, a median incision being made between the navel and the ensiform cartilage. In order to ascertain what part of the jejunum might be the proximal and what the distal end, Nothnagel's test with chloride of sodium was employed, but without result. The search for a portion of the jejunum as near as possible to the duodenum was abandoned, and a loop of intestine was chosen corresponding approximately to that region and of sufficient mobility to allow of its easy adaptation to the anterior wall of the stomach. The latter was opened about an inch above the omental insertion and two inches from the left border of the tumor. The openings into the gut and stomach, which were about 4 ctm. long, were carefully united by separate sutures, one set including the mucous membrane, and two additional rows the serous coat. To prevent an acute bend in the intestine at the point of union, a few sutures were passed through the stomach and gut about an inch from the openings. The patient rallied well from the operation, after having been under the influence of ether two hours, and had little reaction subsequently. The new opening did not fulfill satisfactorily the purpose for which it was made, as stercoraceous vomiting sometimes occurred; it was not relieved by washing out the stomach. The bowels moved quite regularly and freely, considering the amount of nourishment taken. The general condition of the patient was improved for a short time, but she died on the thirty-first day, after vomiting had ceased for three or four days. Death was due to perforation of the posterior wall of the stomach at the site of the carcinomatous ulcer. An examination of the specimen showed perfect union at the point of suture, the communication between the gut and the stomach being large enough to admit the thumb. Unfortunately, the autopsy was not made with sufficient thoroughness to furnish a clear idea of the relative position of the intestine. Perhaps one reason for the regurgitation of the contents of the gut was the resistance offered by the rigid hypertrophied wall of the stomach, which prevented the opening from closing or the mucosa from forming a valve.

The reporter thought that it was advisable to resort to this operation as soon as the first symptoms of pyloric obstruction appeared. One disadvantage possessed by the operation was the length of time required for its performance. In a future case Dr. Lange proposed to adopt Maisonneuve's method, recently recommended by Dr. Senn, of Milwaukee, in which the viscera were united by means of perforated plates of decalcified bone.

Unusual Fracture of the Lower End of the Humerus.—The President presented a specimen of unusual fracture of the lower end of the humerus, one in which the lower fragment consisted almost exclusively of the trochlea and capitellum; he believed that only one similar specimen had been recorded. The patient was a man about fifty years of age, who, while unloading flag-stones, fell to the ground, striking upon his elbow and receiving the weight of one of the stones upon the front of the arm in a manner that was not entirely clear. Two small openings in the skin behind the internal condyle communicated with the fracture, and through them fragments of the epitrochlea were removed. The patient died of delirium tremens a few days after the accident. The lower end of the humerus, the speaker explained, was separated from the shaft by a line of fracture almost parallel with the long axis and frontal plane of the bone, which began on the front of the shaft half an inch above the coronoid fossa and ran downward and very slightly backward to the back of the epicondyles, entering the olecranon fossa close beneath the junction of its upper and anterior surfaces. The external epicondyle was broken off, but was adherent in front to the back and side of the capitellum; the internal epicondyle was not entirely separated from the trochlea, but its pointed end was broken off. The lower fragment comprised the uninjured trochlea and capitellum, a triangular portion of the front of the shaft about an inch high, and the broken epicondyles. The lower end of the upper fragment was shaped like an inverted Y, the two branches of which were formed by the supracondylar ridges, and the interval between them corresponded to the olecranon fossa. The displacement was slight, the lower fragment having moved a quarter of an inch upward and forward. The cavity of the joint contained no blood. The head of the radius was bruised at two points on its edge; the ulna was uninjured.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of May 3, 1888.

The President, Dr. Thomas M. Drysdale, in the Chair;
Dr. J. M. Baldy, Secretary.

(Concluded from page 694.)

Supravaginal Amputation of a Fibroid Uterus, followed in Four Months by Ovariotomy, and again in Six Weeks by Abdominal Section for Purulent Peritonitis.—Dr. Baldy reported the case of a colored woman, forty-three years old, who had come under his care on the 7th of November, 1887. For years she had suffered more or less discomfort from an enlarged abdomen, but until within a year she had managed to get along very comfortably. About a year previous to the speaker's first seeing her, while she was lifting a wash-tub, something "slipped back into the belly," and at the same time the abdomen became somewhat smaller. In all probability this was caused by the large fibroid uterus, which had been resting on the pubic bones, becoming suddenly dislodged, and she now began to suffer acutely from pressure symptoms. The bladder and rectum became prolapsed, and hung between the thighs most of the time; she had difficult and scanty micturition, the urine finally becoming loaded with pus; constipation was constant; the abdomen became enormously distended with ascites; and she suffered constant pain, besides losing large quantities of blood. When the speaker took charge of her she could be out of bed only about two hours a day, on account of the great swelling of her legs and feet. She had been attended by a number of physicians, and had been tapped repeatedly, the last tapping having been done only a few days before. After each tapping she had been confined to bed for several days with acute pain in the lower part of the abdomen, and she was now suffering with one of these attacks of peritonitis, so that it was only with great difficulty that the abdomen could be manipulated. On the following Saturday, a week after the last tapping, the speaker opened the abdomen and removed a fibroid uterus weighing five or six pounds. The belly was so distended with fluid at the time that her breathing was badly interfered with, and over three gallons of fluid were removed. The stump was treated by the extraperitoneal method. The speaker supposed at the time that he was placing the serre-nœud below both ovaries, thus obviating their separate removal; in this, however, it finally proved that he had been mistaken. In cutting away the tumor it became necessary to leave part of the right ovary on the stump, in order that the "button" might be large enough to prevent the serre-nœud from slipping. The peritonæum was half as thick as one's finger. The patient made a slow but uncomplicated recovery. For the first ten days over a quart of straw-colored, syrupy liquid was removed daily by the drainage-tube, and the speaker feared at one time that the peritonæum would never stop secreting it. On the eighth day the stitches, fourteen in number, were removed, and union was found to be perfect, with no stitch-hole abscesses. On the eleventh day the discharge from the drainage-tube stopped abruptly after a dose of salines, and never reappeared. The tube was removed four days later. On the tenth day, while the speaker was tightening the serre-nœud, it broke, and could never be tightened afterward. In consequence of this accident, the strangulated portion of the stump was slow in coming away, and finally, after waiting a full month, during which time slight septic symptoms had set in, the speaker removed the pins, cut away as much of the decaying tissue as he could, and allowed the rest to retract. Within a few days more he succeeded in getting away in small pieces the little tissue that was left. At the end of six weeks the patient was out of bed and at work again, in better health than for years before. The urine gradually cleared up and became normal, and the prolapse of the bladder and rectum disappeared. The depression left by the retracted stump never closed entirely, but continued to discharge about a drop of pus daily from a pin-hole point. In the course of a few weeks a ventral hernia began to show itself at the site of the drainage-tube, and gradually extended downward toward the pedicle until finally it became as large as an orange. The hernia grew more and more troublesome, and she complained of a dull pain in its lower part. As she was obliged to work, and had no time to take the best care of herself, she was advised to go to bed again and have the ventral opening closed. This she did on the 17th of February, when the speaker opened the abdomen at the upper border of the hernia and slit up the tissues to the full extent of the rupture. About a pint of clear, straw-colored liquid gushed out. Passing his finger into the pelvis, the speaker was surprised to find it filled with a cyst attached to the uterine pedicle, which was itself thin and elongated. The pedicle of the cyst was very short and broad. After it had been secured with a double ligature it was removed, and found to be a multilocular ovarian cyst about as large as a base-ball. The omentum had been slightly wounded when the cavity was opened, and, as it bled freely, a ligature was thrown around it and a small piece removed. A large flat sponge was placed over the intestines, and the speaker proceeded to close the incision. The muscles and fasciæ were dissected out on both sides, and united with a continuous silk suture; the wound was then closed with seven sutures passing through the entire thickness of the abdominal wall. No drainage-tube was used, which was extremely unfortunate, for it would have saved the patient's life. On the second day she complained of pain in the left side of the chest, which increased for the next few days. It was apparently pleuritic, although no physical signs could be discovered. She had a slight hacking cough, and about the fourth day she began to expectorate a good deal of dark-colored sputa. For the first week she was extremely restless, and said she did not feel nearly so well as after the first operation. The temperature remained slightly over 100°, and the pulse about 90. On the seventh day the stitches were removed, and a drop of pus followed each of two of them; there was no discharge from these points afterward. This pus apparently explained her discomfort, lack of appetite, etc., but, instead of improving, she grew slightly worse. For several weeks her temperature and pulse varied; on two occasions the temperature was found as high as 102·5°, but never afterward higher than 101·5°. She complained, however, that her hottest time was toward morning, and that she sweat freely and could not sleep. Her tongue was of a dirty-red, irregularly covered with a thick white coat, and pitted. Repeated examinations failed to disclose anything wrong, and yet her whole condition seemed extremely suggestive of sepsis. On the 7th of April the speaker asked a friend to see the patient with him with reference to the advisability of opening her abdomen again. It was decided to wait and observe, and thus once more the force of the old adage, "He who hesitates is lost," was exemplified. From this time on the speaker was led hither and thither by the symptoms; sometimes she was apparently much better, the pulse and temperature would improve, and at one time the tongue was almost clean and the mouth not so sore. About this time a distension of the abdomen was noticed, more marked on the left side, with a region of dullness extending irregularly from the spleen to the pubes. Change of posture caused no change in the line of dullness; this led him to think that there had been an acute attack of peritonitis with effusion, and that all would soon be well. On the 8th of April about an ounce of pus was discharged from the site of the old pedicle, and, a small rubber drainage-tube having been inserted, the cavity was kept well washed out. With this cue to the probable trouble, the opportunity of operating was again lost; the symptoms all improved so much, and she progressed so well for a few days, that the speaker was again seduced into the miserable policy of waiting. The pulse reached 100 and the temperature 100·5°, and then things came to a standstill. The speaker now went out of town for two or three days, determined to operate on his return if there was no improvement. On coming back, he found that there had been another discharge of pus, and that she was very much better; this led him into still more waiting, but no further improvement took place. Looking back over the previous month, he could see a decided and alarming loss, which had been pretty constant in spite of the repeated changes for the better. On the 18th of April, about a month after the second operation, he undertook a third one. The incision was made through the old wound. Here the tissues were an inch thick, hard, and gristly. The hernia had been most effectually closed in, and the ends of the old sutures could be seen plainly.

The hæmorrhage could be controlled only by sponge pressure. On opening the peritoneal cavity, the trouble was at once apparent; a quart of fœtid pus was removed. The abscess cavity extended from the pelvis to the spleen; the intestines were crowded backward and to the right, and everywhere adherent, shutting off the abscess from the rest of the peritoneal cavity. Everything was covered with an apparent pyogenic membrane. The cavities were all thoroughly washed out, and four rubber drainage-tubes were put in, one extending to the spleen, one into the pelvis, and the two others laterally into deep pockets. The incision was then closed with four sutures. Recovery from the anæsthesia was prompt; the pulse was 130 and the temperature 103°. But the next morning the pulse was 100 and the temperature 100°, and the patient was very comfortable. The tubes were washed out twice a day. For the first time for weeks she was able to retain much food. In the course of every twenty-four hours she was given twenty grains of quinine, eight ounces of whisky, a pint of beef-tea, a pint and a half of milk, and two eggs, partly by the mouth and partly by the rectum, and retained most of it. In spite of all that could be done, however, the pulse slowly rose to 120 and the temperature to 103°. She sank slowly, and died on the evening of the sixth day after the last operation. An autopsy was not allowed, but, in removing the drainage-tubes, the speaker enlarged the incision and introduced his hand into the peritoneal cavity. Breaking up the adhesions surrounding the abscess cavity, he found that there had been a slight general adhesion of all the intestines to everything in contact with them. The liver and spleen were surprisingly firm. No more abscess cavities were found. The general appearance of the abscess-wall was that of returning health; the pyogenic membrane had disappeared and the peritonæum was beginning to look normal. There was fair union of the incision, but it broke down readily under pressure.

Looking back over the management of the case, the speaker recognized a number of fatal mistakes and had learned some valuable lessons, which he hoped he might never have to learn again at the same cost. In the first place, all ovarian tissue should have been removed at the time of the first operation. However much he regretted not having done this, there had been at the time sufficient reason to justify leaving what little was left, especially as he thought the serre-nœud was below it and that it would all come away with the stump. He did not yet quite see why it had not done so. The great error had been in not being more careful in disinfecting the site of the old pedicle, which had never ceased to weep, before opening the peritoneal cavity a second time. The peritonæum had undoubtedly become infected from this point during the necessary manipulations incident to the operation, and the trouble had gone on to a purulent peritonitis. Nature had made a grand effort even then to save the patient by throwing out adhesions as the inflammatory process advanced, and had finally succeeded in saving half the cavity from involvement. After doing this she had given all the indication in her power as to what the trouble was, and by thrice discharging pus had apparently called loudly for assistance, which she failed to receive until it was too late.

Dr. H. A. Kelly said he was sorry to say that it had required many lessons to teach him what Dr. Baldy hoped to have learned from this one experience. If anything went wrong which he could not attribute directly to the formation of stitch-hole abscesses—and these did not cause any profound disturbance beyond a sudden rise of temperature—he did not hesitate to open the peritonæum with great care. On several occasions he had opened the peritoneal cavity five, six, or seven days after an operation, and in a recent case two weeks after the original operation. He usually did this without an anæsthetic, or at most with a few whiffs of chloroform or the local application of cocaine. In cases requiring this there had generally been a drainage-tube used, and the wound could readily be reopened in the track of the tube. In a case of pyosalpinx in which the patient had done well for ten days, and then the temperature and pulse had begun to rise, after giving a whiff of chloroform he introduced his little finger into the opening and penetrated to the floor of the pelvis, when a collection of blood mingled with pus made its escape. This did not seem sufficient to account for the symptoms, and by further bimanual examination he detected fluctuation on the right side, and with his finger broke through a thin wall and let out a teacupful of very fœtid pus. The cavity was then washed out with his two-way catheter and a rubber drainage-tube was inserted. Since then he had had his finger through that opening a number of times, for it had a great tendency to close. The case of Dr. Baldy's was instructive from the fact that it showed that there was a certain number of cases in which there was *dry peritonitis*, and the patients would sometimes die in spite of all treatment.

Dr. William Goodell congratulated Dr. Baldy on the courage he had shown in the treatment of his patient, and thought he had nothing to regret. He always felt a good deal of reluctance in reopening the peritoneal cavity, but he had had to resort to it occasionally. He did not think that the best method of curing the hernia had been employed. In his opinion the most satisfactory plan was, after dissecting out the sac and thinned tissues, to close the opening with three series of sutures. The first united the peritonæum alone with a continuous gut suture. The second, also of gut, brought together the divided edges of the tendon. The third, of silk and interrupted, penetrated all the tissues but that of the peritonæum, and brought the edges of the skin and muscles together. The reason that hernia occurred was failure of the tendon to unite. To avoid the occurrence of hernia he had often thought it would be a better plan to cut through one of the recti muscles, instead of the linea alba, for that would give a broad raw surface. He occasionally resorted to this plan in oophorectomy, but it had the disadvantage of being accompanied with more hæmorrhage. In large ovarian tumors the recti muscles were so widely separated that he was perforce compelled to cut through their tendon; at the same time he admitted that he did not ordinarily unite these edges by a separate suture, as was the custom of some excellent operators in this country. His reason was that this took a good deal of time, and it was always desirable to close the wound as soon as possible. But occasionally, in cases of large ovarian tumors, he cut away a long strip of the thinned tendon on either side of the wound, so as to bring the muscles close together. In a certain number of cases, however, hernia would occur, and this was one grave objection to the use of the drainage-tube.

Dr. Parish asked if Dr. Baldy thought that the hernia had been caused by the extraperitoneal method of treating the stump.

Dr. Baldy said that the hernia had not been due to the method of treating the stump. It had begun several inches above the stump and gradually extended toward it. He had, however, seen cases where it had occurred at the site of the stump, and he thought that this could not always be avoided, on account of the large size of the pedicle and the subsequent contraction. He was glad to be able to criticise such a ca
his own practice, as he could do so with more freedom
it had happened to another. He thought it had bee
fault that he had lost the patient. There had c
enough symptoms to indicate the necessity for

abdomen even a third or fourth time. The symptoms continuing after the first discharge of pus should have settled the question of reopening without any more delay. After the second discharge of pus he could not see why he had been so blind to his duty. The patient would undoubtedly have recovered had the belly been opened early enough. Even as it was, after the long delay, she had struggled along for almost a week, but she was so thoroughly saturated with septic poison that she had not sufficient vitality left for the fight. He would not approve of such a policy of waiting in another, and could only excuse himself on the ground of lack of experience in such cases.

Extra-uterine Pregnancy.—Dr. J. B. Deaver reported that, on the evening of February 26th, he had been called to see Mrs. S. He found her in bed complaining of bearing-down pains in the lower part of the abdomen, which were very severe, with a pulse of 80, the temperature 99°, and the skin moist. He had delivered her with the forceps three years previously. Three years prior to that he had operated on her for bilateral laceration of the cervix, and she had made a rapid recovery. From the character of the pain of which she complained at his present visit, he thought she was threatened with a miscarriage. She had gone two weeks over her time for menstruation, and the pain had come on suddenly that afternoon. She admitted that she had been using abortifacients, but said there had been no vaginal discharge following the pains. Vaginal examination revealed nothing. He prescribed one-grain suppositories of opium, one to be used every three, four, or five hours, according to the amount of relief. He saw her the next day at 10.30 A. M., and found her suffering quite as much pain as the day before, when he administered half a grain of morphine hypodermically, and increased the strength of the suppositories to two grains each, one to be given every four or six hours, as required. The pulse was now 96 and the temperature 99°. On making an examination of the abdomen, he found it slightly prominent. The tongue was moist, and the general condition not at all indicative of any serious trouble. As yet there had been no vaginal discharge. Vaginal examination again revealed nothing. After this he did not see the patient until Tuesday evening, when he was summoned to come forthwith. He found the patient much depressed, the abdomen more distended, the pulse 96, the temperature 99°, the tongue moist, with some nausea. The pain was now referred more particularly to the umbilicus, and described as being more continuous than at the last visit. He now determined to make a more thorough examination. Deep vaginal pressure revealed a mass, apparently of the size of an English walnut, situated to the left and posteriorly. This, to his mind, was one of two things—either an extra-uterine cyst or a knuckle of intestine which was the seat of obstruction. At this visit the patient was sick at the stomach and considerably depressed. Again he made a thorough examination of the abdomen, which revealed nothing more than the general distension. Up to this time the patient had had no action of the bowels; this, associated with her general condition and the symptoms referable to the abdomen, and his belief that her trouble was either a rupture of the extra-uterine cyst or an acute intestinal obstruction, led him to ask for a consultation with the view of performing abdominal section. He asked Dr. Joseph Price to see the patient with him, and they both agreed that the operation was urgently demanded. The next morning the abdomen was considerably distended and sensitive to the touch, and still there were no physical signs of a tumor. The vomit was becoming stercoraceous, and the patient was showing more evidence of depression; yet her temperature was 99° and her pulse 96, considerable in volume, but having a wiry character, indicating a peritonitis. At 12 M., with the assistance of Dr. J. Price, Dr. J. W. White, Dr. M. Price, and Dr. H. C. Deaver, the abdomen was opened in the median line between the umbilicus and the pubes. As soon as the peritonæum was reached it was very evident that there had been internal hæmorrhage. Opening the peritonæum as rapidly as possible, the speaker introduced his index finger into the lower part of the abdominal cavity, breaking his way through a mass of clotted blood, and brought the right tube and ovary into the incision. Finding these to be normal, he turned his attention to the left side, when he found at the junction of the tube and uterus a ruptured extra-uterine cyst with the placenta *in situ.* In attempting to ligate this off, the placenta was dislodged, occasioning for a few moments a frightful hæmorrhage. He quickly transfixed the broad ligament below the cyst, and in ligating found it necessary to include the cornu of the uterus before the bleeding could be controlled. The pregnancy was tubo-interstitial. Having secured the ligatures, he cut the cyst away. The fœtus could not be found. An ordinary-sized basinful of clotted blood was removed from the peritoneal cavity. After the removal of this, the sigmoid flexure, distended to the size of an ordinary wrist, presented itself at the bottom of the wound; it was considered judicious to examine this portion of the intestinal tract, owing to its great distension, when it was found that at the junction of the terminal portion of the descending colon with the sigmoid flexure there was a marked kink of the bowel, due to an inflammatory band. This was relieved, which resulted in the intestine contracting and expelling a large amount of flatus *per anum.* He now learned that the patient had been given by her husband, two or three days previously, an enema of soap-suds, and that the night before, when the husband was administering the enema again, he lost the rectal nozzle and had not since been able to find it. Having completed the operation, with the exception of making the final toilet of the peritonæum, the speaker examined the lower part of the sigmoid flexure as well as the upper part of the rectum, when he discovered a foreign body, evidently the rectal tube, in the sigmoid flexure. This was pushed along the bowel into the rectum, from which it was removed after some little difficulty with a sponge forceps. The abdominal cavity was irrigated with hot distilled water, and a glass drainage-tube was introduced into the left side of the pelvis. The wound was closed with six interrupted silk sutures. The wound was dressed with a dry aseptic dressing. The patient showed very little depression from the operation, and progressed very well for three days, when the drainage-tube was removed. For two days more she did well; then the abdomen became very much distended, the vomiting recurred, and the temperature went up to 101°. The speaker thought that in all probability a small collection of purulent matter in the pelvis might be the cause of these symptoms, and therefore he opened the lower part of the wound and explored the pelvis, but could find nothing more than what proved to be healthy deposit. To be on the safe side, he introduced a small drainage-tube, but with little or no effect. The patient died at the end of twenty-four hours. Unfortunately, he had been unable to secure an autopsy, but he thought the immediate cause of death was most probably obstruction of the bowels. The case was interesting, in the first place, from the character of the pregnancy, tubo-interstitial; secondly, from the early rupture, but six weeks of gestation having elapsed; thirdly, because there was no evidence of collapse, which would naturally be looked for in a case of internal hæmorrhage; fourthly, from the cause of the rupture, which he thought had been the use of abortifacients; and, finally, from the signs of acute intestinal obstruction.

Dr. Baldy thought that the diagnosis in cases of extra-uterine pregnancy was a matter of extreme difficulty, and, as a rule, that it was impossible to make a positive diagnosis. Some time ago he had seen a patient at the Philadelphia Dispensary who had just been examined by Dr. Price. He was asked to examine the patient and make a diagnosis. The symptoms presented, he thought, every point to which attention had been called as bearing upon the diagnosis of extra-uterine pregnancy. The menses had stopped for one or two periods and the woman presented all the signs one would expect to find at about the second month of pregnancy, including morning sickness and milk in the breasts. There was irritation of the bladder and rectum. Examination by the vagina disclosed a small mass to the left of the uterus. She was having characteristic colicky pains, and had been passing from the vagina decidual *débris*, or at least what was mistaken for such from her description. They both made a diagnosis in accordance with these facts, and several other gentlemen present concurred. At the operation the case was found to be one of small ovarian cyst. He thought that we heard a great deal of cases in which the diagnosis had been made and verified, but not enough of such cases as this one, which went to show how easily one could be mistaken. If the diagnosis was made, the question of treatment arose, and one of the burning questions of the day was whether extra-uterine pregnancy should be treated by electricity or by abdominal section where the diagnosis was supposed to have been made before rupture had taken place. The majority of American surgeons, he was sorry to say, at present favored the treatment by electricity. Of course, after rupture had taken place, there was but one treatment—that of abdominal section. The treatment by electricity presented some advantages. It would undoubtedly kill the fœtus, and it did away with the objection of the so-called mutilation of the woman, as it also did away with the worry and excitement of an operation. There were, however, disadvantages which could not be overlooked. There were cases on record in which the fœtus had ulcerated its way out. Dr. Mann had stated that there were only two such cases on record, and that, as the number was so small, they were of no great importance to them; but, if these two cases were compared with the total number of cases of extra-uterine pregnancy treated in this way and reported within the last few years, the proportion was decidedly large. There had been four cases reported of rupture of a vessel without rupture of the cyst. In one case, Dr. Janvrin's, the vessel had ruptured some days after the fœtus had been killed by electricity, and the patient lost her life. Here, again, was a very positive danger, and one which could not be ignored, as Dr. Mann seemed to think. So far as the speaker knew, there had never been a death which could be attributed to the knife. A number of patients had died after the operation, but they had died in consequence of the rupture, and not from the operation. The fact that the fœtus had been killed did not make the tube pervious, but left the woman as sterile on that side as if it had been removed by the knife and ligature. Dr. Lusk had reported two cases, in one of which, after six years, there was a mass still remaining as large as a pigeon's egg, and in the other, after four years, the tumor was as large as a hazel-nut. This was the usual history of these cases. The speaker was in favor of removing any pathological growth whatever from any portion of the body at any time if it could be done without risk to life. These masses which were allowed to remain were as likely to set up subsequent trouble as some of the tubal and ovarian troubles for which operations were performed every day. It seemed to him that the gentlemen who accepted the knife for the least dangerous and refused it for the more dangerous trouble were extremely inconsistent, to say the least. By operation the cyst was removed, the fear of subsequent danger was done away with, and the risk of the continued growth of the placenta, however small that risk might be, was avoided. By "fooling" with electricity, we put ourselves very much in the position of the child playing with fire and our fingers were in just as much danger of being burned.

Dr. Kelly said that it made a great difference whether we saw the case in its incipiency, say from the end of the sixth to the eighth week, when we must be more or less puzzled, or in the third or fourth month, when there was a large tumor, or, again, in an advanced stage, where the dangers and difficulties were of a different character. Each of these classes demanded separate consideration and different treatment. Dr. Baldy had referred to a case in which he said that all the signs of extra-uterine pregnancy were present. The speaker would criticise the statement in two particulars. In the first place, the decidua should be seen by the physician. This was a characteristic sign. If we depended upon the statements of patients, we were apt to be deceived. In the second place, there was another characteristic sign, and that was the diminution of the size of the tumor while under observation, due to the absorption of amniotic fluid. This had been observed in his own case. Very serious trouble had followed faradaic fœticide in a large number of cases. Both of Dr. Allen's historical patients had had serious inflammatory trouble for a long time after being invalided. In the discussion following the speaker's paper on the removal of an unruptured extra-uterine gestation cyst, Dr. Harris had brought to light the subsequent history of many cases in which grave trouble had followed faradaic fœticide.

Dr. O'Hara thought that the occurrence of symptoms indicating the presence of internal hæmorrhage would throw light upon the diagnosis. He had had a case in which the patient had internal hæmorrhage, and the only thing to explain it was that she had passed her time for menstruation.

Dr. Goodell asked how Dr. Deaver explained the presence of the nozzle of the syringe so high in the bowel.

Dr. Deaver said that in his case there had been no indications of internal hæmorrhage. The only thing which had attracted the patient's attention was the occurrence of pain, which had appeared four hours before his first visit. The only way in which he could account for the nozzle of the syringe being so high was that, after it had become detached, it had been forced upward by the stream of water. There could have been no suction, on account of the obstruction of the bowels.

Book Notices.

Dissolution and Evolution and the Science of Medicine: An Attempt to Co-ordinate the Necessary Facts of Pathology and to Establish the First Principles of Treatment. By C. Pitfield Mitchell, Member of the Royal College of Surgeons, England, etc. London: Longmans, Green, & Co., 1888. Pp. xvi–246.

Ambition is a quality which always excites a certain meed of admiration, even when it leads to overtemerous exploits; and no more ambitious attempt has come within our ken than this effort to apply the arguments of Herbert Spencer's synthetic philosophy to the uncertainties of pathology and ætiology, since it involves not only an ingenious sophistry in reconciling known facts to a preconceived hypothesis, but an almost creative genius in inventing pathogenic doctrines to support theoretical postulates. The author's fundamental assumption is that disease is "a disintegration of matter caused by an absorption of surrounding energy," and, if all observed phenomena do not at first sight harmonize with this assumption, *tant pis pour les faits*. Thus, although the phenomena of inflammation and suppuration confessedly do not appear to conform to the writer's definition, it is explained that what we really see is an increase in the number of "the more simple and less specialized units, the white corpuscles," and that, since these do not play in their extravasated state the special rôle of blood leucocytes, their negative "attributes are understood to signify degenerative changes." In consistency with this exegesis, the secretions of the mammary and other glands are classed among products of dissolution, while, on the other hand, fat-infiltration in pseudo-hypertrophic paralysis is regarded as an evolutional or integrative process. The diphtheritic exudation is disposed of as an example of coagulation-necrosis, and we are told that all retrograde metamorphorses "imply an absorption of external energy," as do likewise scarlet fever, anthrax, tinea, tænia, pediculi, itch, etc.

No existing theory concerning neoplasmata suits the author's views, and, not having to swear in the words of either Virchow or Waldeyer, he launches the startlingly original hypothesis that the formation of tumors is an example of "asexual genesis" from the natural plastids of the body, in all probability a reversion to the primal type of reproduction of the *Protozoa*, affirming that "the tumor-developing period of life is the reproductive period," and in support of this proposition citing "cancer of the breast and uterus." He furthermore "strongly suspects" an important relation between tumor-formation and high nutrition and excess of food. This latter condition seems to play a large and varied part in his ætiological philosophy, for he says that "both pneumonia and phthisis are initially dependent on the action of pulmonary arterial blood made irritant by the ingestion of superabundant, improper, or impure food."

Our readers would hardly thank us for following the chain of suppositions through the mazes of neurology, alienism, and other special fields of pathology over which the author roams in a desultory way, seasoning his *obiter dicta* with rather too frequent repetitions of "perhaps," "presumably," "not improbably," "in all likelihood," "it appears safe to infer," etc. The specimens already given may suffice to justify the opinion that the work is an ingenious but somewhat sophomorical essay, based more upon insufficient closet study than upon practical experience or thorough conversance with scientific literature.

BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the New York Pathological Society. For the Year 1887. Pp. 212.

The Goulstonian Lectures (substance of) on Insanity in Relation to Cardiac and Aortic Disease and Phthisis. Delivered before the Royal College of Physicians of London, March, 1888. By W. Julius Mickle, M. D., F. R. C. P. Lond., etc. [Reprinted from the "British Medical Journal."] London: H. K. Lewis, 1888. Pp. 5 to 93.

New and Rare Drugs: Being a Concise Reference to the Uses, Doses, and Preparations of some 250 of the Latest Introductions. Fifth Edition. London: Christy & Co., May, 1888.

Memorial Address, delivered before the Faculty and Students of the College of Physicians and Surgeons on the First Anniversary of the Death of Professor A. F. Erich. By George H. Rohé, M. D., Baltimore.

Report of Four Cases of Trephining the Skull. By H. O. Walker, M. D., etc., Detroit. [Reprinted from the "Medical and Surgical Reporter."]

Sulfonal, a New Hypnotic. By Edmund C. Wendt, M. D., etc. [Reprinted from the "Medical Record."]

A Case of Unilateral Spasm of the Tongue. By Edmund C. Wendt, M. D. [Reprinted from the "American Journal of the Medical Sciences."]

Recent Views regarding the Pathology and Treatment of Pertussis. By Edmund C. Wendt, M. D., etc. [Reprinted from the "Medical News."]

Congenital Hæmophilia, with the History of a Remarkable Case. By Edmund C. Wendt, M. D., etc. [Reprinted from the "Medical Record."]

De quelques phénomènes névropathiques réflexes d'origine amygdalienne. Par le Docteur Albert Ruault, etc. [Extrait des "Archives de Laryngologie."]

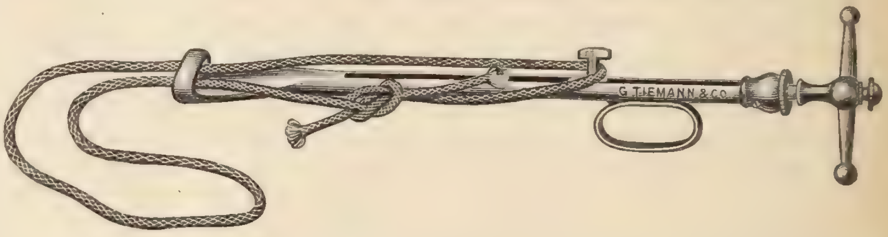
New Inventions, etc.

A ROPE ÉCRASEUR FOR HYSTERECTOMY.

By CHARLES N. DIXON JONES, M. D.,
BROOKLYN.

THE accompanying cut illustrates a temporary rope écraseur which I exhibited at the December meeting of the Section in Surgery of the New York Academy of Medicine. Those who are accustomed to use the elastic ligature in hysterectomy or supra-vaginal amputation of the uterus for myoma will find the operation greatly facilitated by the use of this instrument.

Some form of instrument for temporary compression of the pedicle during manipulation and enucleation before the stump is permanently secured is a necessity in order to prevent hæmorrhage.



The elastic tourniquet is not so rapid nor so powerful in its action, and, furthermore, it is open to the more serious objection that it is apt to slip over the stump after the tumor is removed.

The rope écraseur is a modification of Mr. Lawson Tait's well-known clamp. It is made stronger and longer, being about fourteen inches in length, so as to give a wide range of compression in the rope.

The rope is thoroughly boiled before use, so that it is not likely to slip. The instrument may be easily tightened during any stage of the operation. After it has accomplished its purpose the rope is cut, and the instrument is quickly removed and laid aside.

163 DE KALB AVENUE.

Miscellany.

The American Gynæcological Society will hold its thirteenth annual meeting in Washington on the 18th, 19th, and 20th of September. The preliminary programme includes the following: "On the New Cæsarean Section," by Dr. William T. Lusk, of New York; "The Cause and Treatment of Urethrocele," by Dr. Thomas Addis Emmet, of New York; "Ureteritis—its Diagnosis and Symptomatology," by Dr. Howard A. Kelly, of Philadelphia; "High Amputation of the Uterus for Cancer," by Dr. Thaddeus A. Reamy, of Cincinnati; "The Technique of Vaginal Hysterectomy," by Dr. E. C. Dudley, of Chicago; "A Case of Rupture of the Uterus in Labor at Term—the Child born alive, the Mother subsequently having a full-term Child in Normal Labor," by Dr. C. M. Green, of Boston; the President's Address, by Dr. Robert Battey, of Rome, Ga.; "The Ætiology, Pathology, and Treatment of

Anteflexion of the Uterus," by Dr. T. Gaillard Thomas, of New York; "Some Cases of Nerve Prostration in which the Remote Effects of Anæsthesia by Ether were bad," by Dr. William Goodell, of Philadelphia; "Cystocolpocele complicating Labor and Pregnancy—a supplemental contribution," by Dr. Samuel C. Busey, of Washington; "Adenoma of the Fundus Uteri," by Dr. James R. Chadwick, of Boston; "A Case of Extra-uterine Pregnancy," by Dr. B. F. Baer, of Philadelphia; "On the Treatment of Extra-uterine Pregnancy," by Dr. Joseph E. Janvrin, of New York; "On the Treatment of Pelvic Abscess," by Dr. R. Stansbury Sutton, of Pittsburgh; "A Case of Subinvolution cured by the Removal of the Appendages," by Dr. Howard A. Kelly, of Philadelphia; and "Some Points learned from an Experience of Thirty-four Ovarian Operations with but one Death," by Dr. Joseph Taber Johnson, of Washington.

The American Rhinological Association.—The sixth annual meeting will be held at Cincinnati on Wednesday, Thursday, and Friday, September 12, 13, and 14, 1888.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 22d:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 2d corresponded to an annual rate of 17·6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 13, and the highest in Wolverhampton, viz., 24·9 in a thousand. Small-pox caused 4 deaths in Sheffield, 1 in Bristol, 1 in Preston, 1 in Oldham, 1 in Hull, 1 in Derby, and 1 in Nottingham.

London.—One thousand three hundred and twenty-three deaths were registered during the week, including measles, 24; scarlet fever, 19; diphtheria, 26; whooping-cough, 37; enteric fever, 9; diarrhœa and dysentery, 19; and choleraic diarrhœa, 1. The deaths from all causes corresponded to an annual rate of 16·1 in a thousand. Diseases of the respiratory organs caused 237 deaths; different forms of violence, 73; and 11 suicides were registered. In greater London 1,607 deaths were registered, corresponding to an annual rate of 15·2 in a thousand of the population. In the "outer ring" 7 deaths from whooping-cough and 9 from diphtheria were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending June 2d in the sixteen principal town districts of Ireland was 21·5 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 5·2, and the highest in Wexford, viz., 47 in a thousand. In Dublin 159 deaths were registered, including measles, 1; whooping-cough, 9; enteric fever, 3; scarlet fever, 5; and diarrhœa, 2.

Scotland.—The deaths registered in eight principal towns during the week ending June 2d corresponded to an annual rate of 19·3 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12·2, and the highest in Paisley, viz., 22·8 in a thousand. The aggregate number of deaths registered from all causes was 489, including measles, 11; scarlet fever, 9; diphtheria, 4; whooping-cough, 14; fever, 7; and diarrhœa, 7.

Calcutta.—The report of vital statistics for the quarter ending March 31st shows that 541 deaths from cholera were registered during that period. "The water supply in the worst localities is of the scantiest. In the riparian districts the inhabitants have to resort to the river and to the polluted wells in their own houses. The occupants of large bustees have to resort to the nearest filthy tank. 'Give us water' is the almost universal cry of the inhabitants in the native quarters of the town. That cry has been kept up constantly, to my own knowledge, for nearly two years, without the slightest relief. In 1884, four years ago, during the unprecedented outbreak of cholera in Calcutta, the scarcity of water then formed a subject of complaint by some of the commissioners, but apparently without any effect."

Christiania, Norway.—The Norwegian Government, under date of May 24th, issued an order that the following-named countries and ports, until further notice, will be considered cholera-infected: China, Japan, Cochin China, East Indian Islands, East India, Syria, ports in the Red Sea, ports in Uruguay, and ports in Chili.

Marseilles.—Nine hundred and five deaths were registered during the month of May, 1888, including small-pox, 14; enteric fever, 33; scarlet fever, 3; diphtheria and croup, 50; and measles, 47.

Buenos Ayres.—One thousand and sixty-nine deaths were registered during the month of March, 1888, including small-pox, 78; enteric fever, 65; and diphtheria, 76.

Montevideo.—Three hundred and seventy-five deaths were registered during the month of March, 1888, including small-pox, 39; enteric and typhus fevers, 15.

Havana.—Eight deaths from yellow fever and 5 from small-pox were registered during the week ending June 16, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	June 2.	2,260,945	955	..	....	6	....	10	6	37
Glasgow	June 2.	545,678	225	..	....	....	....	....	6	2
Warsaw	May 26.	444,814	176	..	....	4	....	....	2	8
Calcutta	May 5.	433,219	216	61	....	..	....	....	....	....
Amsterdam	June 2.	389,916	158	..	....	....	....	....	1	6
Rome	April 21.	388,300	181	..	....	3	....	1	2	1
Copenhagen	May 29.	300,000	124	..	....	....	....	1	2	6
Munich[1]	May 26.	275,000	165	.	....	....	....	1	3	4
Palermo	June 2.	250,000	82	..	....	....	....	1	4	3
Genoa	June 2.	179,401	93	..	....	....	1	....	...	....
Leipsic	June 2.	170,000	53	..	....	....	....	1	....	....
Trieste	May 12.	154,500	91	..	....	1	....	4	....	2
Stuttgart	June 2.	125,500	44	..	....	....	....	....	....	....
Bremen	May 26.	122,000	25	..	....	....	....	....	....	1
Havre	June 2.	112,074	67	..	....	5	...	1	....	....
Barmen	May 26.	109,000	45	..	....	....	....	....	1	....
Leghorn	June 3.	101,718	27	..	....	....	....	....	....	....
Cadiz	May 26.	65,028	54	..	....	....	....	....	....	....
Cadiz	June 2.	65,028	51	..	....	....	....	....	....	....
Curaçoa	June 2.	25,000	5	..	....	....	....	....	....	....
Vera Cruz	June 7.	23,800	19	..	....	....	....	....	....	....
Gibraltar	May 27.	23,634	4	..	....	....	....	....	....	1
Sagua la Grande	May 26.	15,605	8	..	....	1	....	....	....	....
Sagua la Grande	June 2.	15,605	10	..	....	....	....	....	....	....
Bermuda	June 12.	15,260	......	..	....	....	....	..	....	....
Matamoras	May 26.	12,000	5	..	....	....	....	....	....	....
Matamoras	June 2.	12,000	10	..	....	....	....	....	....	....
Laguayra	May 26.	7,428	6	..	....	....	....	....	....	....
Laguayra	June 2.	7,428	5	..	....	....	....	....	....	....
Livingston	June 9.	2,500	1	..	....	....	....	....	....	....
S'n Juan d'l N'rte	May 21.	500	......	..	...	....	....	....	....	....

UNITED STATES.

Washington, D. C.—The following regulations, approved by the President and promulgated by the Secretary of State, have been issued to United States consular officers by the State Department. They are republished here for the information of United States quarantine officers and municipal health officers:

The Quarantine Service.

Section 2 of an act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April 29, 1878, provides—

"That whenever any infectious or contagious disease shall appear in any foreign port or country, and whenever any vessel shall leave any infected foreign port, or, having on board goods or passengers coming from any place or district infected with cholera or yellow fever, shall leave any foreign port bound for any port in the United States, the consular officer, or other representative of the United States at or nearest such foreign port, shall immediately give information thereof to the Supervising Surgeon-General of the Marine-Hospital Service, and shall report to him the name, the date of departure, and the port of destination in the United States, and the consular officers of the United States shall make weekly reports to him of the sanitary condition of the ports at which they are respectively stationed."

The object of the foregoing section of the law is to secure timely advice of the outbreaks of cholera and yellow fever, and of the probable transportation of the poisons of these preventable diseases in vessels bound for the United States; and consular officers for the United States are directed to put themselves into communication with the health authorities of their respective stations, and from the information obtained from such authorities, or from other reliable sources where no regularly constituted health authorities exist, to prepare and transmit by the mails to the Department of State, for the information of the Surgeon-General of the Marine-Hospital Service, on forms prescribed by the Department, weekly reports of the appearance, progress, or termination of cholera, yellow fever, small-pox, plague, or typhus occurring in their respective localities, and are further instructed to include in said reports information in relation to the prevalence of other preventable diseases, as diphtheria, enteric and scarlet fevers, etc., the prevailing disease or diseases in port, if any, and, when practicable, the annual death-rate per one thousand of the population as shown by the official record of deaths for the week reported. Special interest should be taken in the healthiness of vessels, reporting those arriving from or departing to the United States in a bad sanitary condition; also reporting the facts of any serious sickness or unhealthiness of seamen in port, or of crews arriving from or departing to the United States.

In the event of the outbreak of Asiatic cholera, yellow fever, or Asiatic plague, or other contagious disease in epidemic form, the Department must immediately be advised by cable or telegraph of such outbreak, using such abbreviation as the Department may from time to time direct.

The following cipher and abbreviations should be used:

"Cholera"—meaning cholera has appeared.

"Yellow"—meaning yellow fever has appeared.

The name of a country—meaning that the disease has made its appearance at several places in the country named.

The name of a vessel—meaning that the vessel named has departed from the place whence the dispatch is sent, bound for a port in the United States.

"Poison"—meaning that the vessel referred to, though leaving a then healthy port, has on board passengers or goods (baggage) coming from a district infected with cholera or yellow fever.

When cholera or yellow fever has appeared at several places in a country, name the country only after the word "cholera" or "yellow," as the case may be; if it has appeared at the place only from which the dispatch is sent, do not repeat the name of that place in the body of the dispatch, but if at any other particular place, name it.

In a dispatch announcing the departure of a vessel to a port in the United States, the port of departure will be understood to be the place from which the dispatch is sent; hence the name of the port of departure need not be repeated. In the body of a dispatch the name of the vessel should be given first; second, the name of the country, when applicable; third, the day of departure, omitting the day of the month and of the year, as they will be understood without saying; fourth, the name of the port of destination (the importance of observing this order will appear obvious when it is understood that many vessels bear the names of ports in the United States); fifth, the name of the disease, "cholera" or "yellow," as the case may be, should be given, provided the Department has not been already advised of the outbreak of the disease. When advice has once been given of the appearance of cholera or yellow fever at a certain port, the name of the disease need not be repeated in dispatches announcing the subsequent departure of vessels from that port.

When the name of a vessel is given without stating whether it is a steamer or sailing-vessel, it will be understood to be a steamer; if the vessel is a sailing-vessel, its proper designation should be prefixed. The sender of the dispatch should sign his last name only.

The consul will give to every master of a vessel bound to a port in the United States a bill of health, on the form prescribed by the Department, giving full information of the number of persons on board such vessel at the time of sailing, and the sanitary condition of the vessel so far as known, and also the sanitary condition of the port of departure at the time. At such ports as may from time to time be designated by the Department, a physician will be employed or detailed to make the necessary inspection of the vessel, her passengers, crew, cargo, and ballast. In case the master of any vessel shall refuse to receive a bill of health, the fact shall be immediately reported to the Department by cable, if necessary.

When a vessel having received a bill of health touches at any other port while *en route* to the United States, the consul at such port shall *visa* the bill of health, and note thereon such changes as may have taken place since its original issue.

Monthly reports of the bills of health issued must be made to the Department on the regular forms.

Memphis, Tenn.—Thirteen cases of small-pox were reported up to the 18th inst. in the Memphis taxing district.

ANSWERS TO CORRESPONDENTS.

No. 199.—1. We do not think a conclusion could always be reached with certainty, but marks of free hæmorrhage having taken place at the scene of the supposed accident would go far to show that it had actually been the cause of death. 2. We should advise Vienna. Unless there are special reasons to the contrary, we think you had better postpone your marriage until your return.

No. 200.—Hypnotism is said to have been employed successfully as an anæsthetic in parturition, but we do not think that at present it deserves to be "counted among obstetrical anæsthetics." The means of inducing it vary according to the susceptibility of the subject. For an account of a case in which it was accomplished by compression of the eyeballs, see our issue for June 11, 1887, page 659.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

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